Evaluation of Integrated Community-wide Intervention Approaches to prevent overweight in children

van Koperen, T.M.

2016

document version
Publisher's PDF, also known as Version of record

Evaluation of Integrated Community-wide Intervention Approaches to prevent overweight in children

Supportive tools and critical success factors to programme evaluation performance

Marije van Koperen

Evaluation of Integrated Community-wide Intervention Approaches to prevent overweight in children

Supportive tools and critical success factors to programme evaluation performance

Marije van Koperen

The studies in this thesis were conducted at the Department of Health Sciences and the EMGO+ Institute for Health and Care Research at the VU University Amsterdam, the Netherlands.

The studies in this thesis were financially supported by the Directorate General for Health and Consumers (European Commission, Agreement 2007 327) and by the Netherlands Organization for Health Research and Development (ZonMW) (project no. 200100001).

ISBN: 978-94-6332-105-1

Printed by: GVO drukkers & vormgevers B.V.
Cover design: Ferdinand van Nispen - Citroenvlinder DTP&Vormgeving, Niels Kamphuis & Marije van Koperen
Lay-out: Marije van Koperen

VRIJE UNIVERSITEIT

Evaluation of Integrated Community-wide Intervention Approaches to prevent overweight in children

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad Doctor aan
de Vrije Universiteit Amsterdam,
op gezag van de rector magnificus
prof.dr. V. Subramaniam,
in het openbaar te verdedigen
ten overstaan van de promotiecommissie
van de Faculteit der Aard- en Levenswetenschappen
op woensdag 21 december 2016 om 15.45 uur
in de aula van de universiteit,
De Boelelaan 1105

door

Tessa Marije van Koperen

geboren te Oss

promotoren: prof.dr.ir. J.C. Seidell
prof.dr.ir. A.J. Schuit
copromotor: dr. C.M. Renders

[Alice says]`Would you tell me, please, which way I ought to go from here?'
`That depends a good deal on where you want to get to,' said the Cat.
`I don't much care where--' said Alice.
`Then it doesn't matter which way you go,' said the Cat.
`--so long as I get somewhere,' Alice added as an explanation.
`Oh, you're sure to do that,' said the Cat, `if you only walk long enough.'

From: Alice's Adventures in Wonderland, Lewis Carrol

In every job that must be done, there is an element of fun.
You find the fun, and – SNAP! - the job's a game!

From: Mary Poppins, P.L. Travers

This thesis is dedicated to my dad and his once brilliant mind

Contents

Chapter 1

General introduction

CHILDHOOD OVERWEIGHT: PREVALENCE AND PROBLEM

Childhood obesity is a serious global public health problem (1, 2). In 2013, worldwide 2.1 billion people were estimated to be overweight including 42 million children under the age of five (3, 4). Overweight and obesity are not just a problem in developed countries, the developing world has also witnessed a three-fold increase in obesity rates over the last 20 years (5). Nowadays in developed countries approximately 23% of children are overweight or affected by obesity, while in developing countries 13% are affected by overweight or obesity (3). Although the rate of increase in the number of obese children appears to be slowing down or flattening off in some countries (6, 7), global predictions based on current trends show a likely increase in the number of overweight or obese infants and young children to 70 million by 2025 (8). Childhood obesity is associated with multiple serious physical, psychological, and social consequences (9, 10) and is likely to persist into adulthood (11, 12). Given the magnitude of the number of children with overweight and obesity today, future predictions and the associated health and quality of life consequences, there is a serious need to address this health problem.

PREVENTION OF OVERWEIGHT IN CHILDREN

Since obesity, once established, is difficult to treat, prevention is the main priority. Traditionally, the prevention and treatment of overweight and obesity have focused on stimulating changes in the behaviour of individuals (13). Evidence showed that behaviours such as an increased consumption of high energy density beverages and foods, a low consumption of vegetables and fruits, less physical activity and more sedentary leisure time activities contribute to overweight and obesity (14-16). However, overweight and obesity develop within a socio-cultural and physical environment in which these behaviours are made possible and sometimes even stimulated (17, 18). Therefore it is likely that interventions targeting individual behaviour (19) (e.g. education, treatment, improving skills) are not sufficient to reverse the increase in the prevalence of overweight: interventions at a higher level are needed (10, 20, 21). Or, as Katan said in his commentary on a large weight-loss study from Sacks et al (22) which failed to show significant changes in BMI: “individual treatment is powerless against an environment that offers so many high-calorie foods and labor-saving devices” (23). And although individual treatment remains important, children’s behaviour depends much on their immediate physical and social environment (24-29). Hence, the prevention of overweight and

obesity in children must be addressed at both the individual and the environmental level (10, 17, 21, 30-33). This socio-ecological perspective assumes interaction and reciprocal causation between the individual and their environment but also between distal and more proximal environmental determinants (31, 34-36) (Figure 1). For instance micro-level factors (e.g. parents stimulating their children to play outside) will have a larger impact when complemented by favourable environmental conditions at the macro-level (e.g. the presence of safe playgrounds in the neighbourhood).

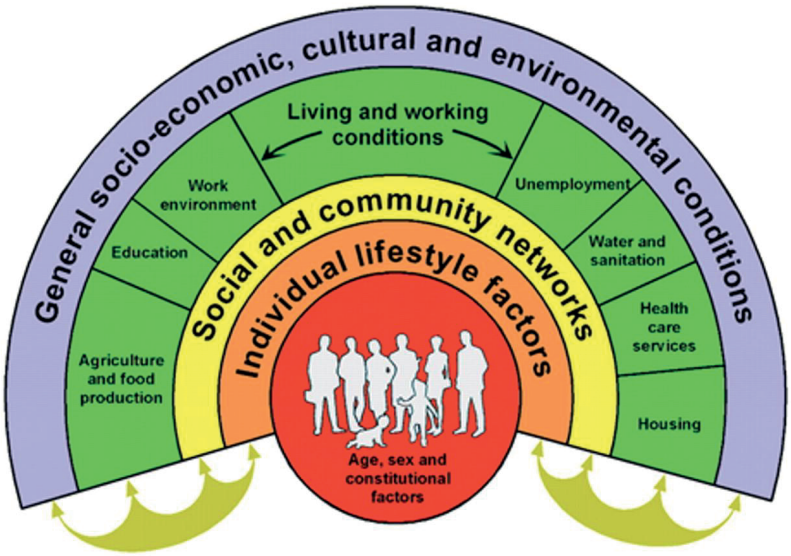


Figure 1: Dahlgren and Whitehead's Social Model of Health (used with permission of the Institute of Future Studies, Stockholm, Sweden)(35)

Within the context of childhood overweight and obesity, the ecological framework as presented in figure 1 shows that a child's weight is influenced by individual lifestyle factors (e.g. the intake and expenditure of energy patterns of that child), but that these patterns are embedded within the larger ecology of the child's family (social and community networks), community (living conditions) and demographic characteristics (general socioeconomic, cultural and environmental conditions). An implication of this ecological model is that interventions targeted at preventing overweight and obesity in children should be

implemented across the multiple contexts that can influence a child's nutrition, physical activity pattern and weight (e.g., schools, home and family, community and healthcare settings). However, to achieve this contextual change, support and involvement of individuals and local public and private organisations is required (34, 37). These joint efforts should be supported by intersectoral collaboration between local governmental sectors (38-40). In this respect, an intervention approach that integrates all these sectors and parties and is focussed on both community and individual change, is regarded as more likely to succeed in preventing childhood overweight (2, 33, 38, 41, 42) and this is emphasized by current research (43, 44).

INTEGRATED COMMUNITY-WIDE INTERVENTION APPROACH

An Integrated Community-wide Intervention Approach (ICIA) aims to conduct multiple interventions, in a collaborative effort with multiple stakeholders, in multiple settings, and is directed towards multiple target groups in a community (2, 36, 45-48). Due to the interaction and reciprocal causation between distal and proximal environmental determinants of overweight and obesity an ICIA is a complex intervention. To clarify the difference between simple interventions (e.g. health education in a classroom) and complex interventions (e.g. ICIAs), we use the model of Craig et al, which recognises five elements of complexity of interventions (Table 1) (49).

An ICIA resembles a community-based intervention (CBI) in the sense that both address health or social problems within a community (i.e. a geographical area) through the significant participation of members of that community in design, implementation, and evaluation (50). An ICIA has either a community-based or community development orientation (51). The term 'Integrated' emphasizes the importance of the integration of multiple sectors and parties from both within and surrounding the community given its socio-ecological framework. An ICIA comprises multiple activities which are conducted by multiple stakeholders, such as local government (e.g., cities, neighbourhood), schools, semi-governmental organizations (e.g. sport services, regional public health services, social welfare organisations) and private-sector organizations (e.g., hospitals, private businesses, child care providers) (52). ICIAs that have been implemented to prevent overweight in children include the Shape Up Somerville programme in the USA (53) and the Be Active Eat Well programme in Australia (54). However, many of these programmes have tended to focus on a specific health or behaviour determinant

and have featured a strong emphasis on school-based intervention components. Another multi-level programme that has been implemented worldwide in the last decade is EPODE (55).

Table 1: Characteristics and examples of complex and simple interventions - free to Craig et al (49)

	Characteristics	Simple interventions	Complex Interventions
1	Number of interacting components within the experimental and control interventions	Limited number of interacting components; clearly identifiable components	Large number of interacting components; components are not all clear and transparent
2	Number and difficulty of behaviours required by those delivering or receiving the intervention	Limited number of behaviours need to be changed; clearly specified behaviours	Interventions need to change multiple interacting behaviours with intermediaries and target group
3	Number of groups or organizational levels targeted by the intervention	The target group can be clearly defined: an individual or segmented target group	Multiple target groups at different organizational levels with different characteristics
4	Number and variability of outcomes	Interventions have limited and clear expected outcomes	Large variety of outcomes; due to emerging design caused by changing context and needs of stakeholders outcomes can change
5	Degree of flexibility or tailoring of the intervention permitted.	The intervention is clearly defined, does not need to be customized.	There is no one-size-fits-all interventions; local adaptation and flexibility in design is needed; no single solution to defined problem

ICIA DEVELOPMENT: FROM EPODE TO JOGG

FLVS and EPODE

In 1992 the University of Lille in France started a school nutrition education programme in two towns in the North of France: the Fleurbaix Laventie Ville Santé study (FLVS-study) (Figure 2). Soon the programme was extended to activities outside the school and the number of health

professionals and lay-people (i.e. parents) joining the programme increased. An effect evaluation in 2004 showed a decrease in prevalence of overweight children (37).

Previous prevention studies for cardio-vascular diseases in Finland (56), The Netherlands (57) and the US (58) have shown that community interventions can have an effect – albeit a small one - on health. And multiple theoretical ecological models have highlighted the impact of factors outside the individual on his/her behaviour (59, 60) and the need to address these in order to increase the likelihood of success of an intervention approach. However, for overweight and obesity programmes 'effect studies', especially within community settings, are scarce (61, 62).

Following the 2004 effect evaluation lessons learned from the Fleurbaix Laventie Ville Santé study were shared with a social marketing agency (Protéines) and translated into a community-wide intervention approach called EPODE (Figure 2). EPODE is the acronym for 'Ensemble, Prévenons l'Obesité Des Enfants', which means "together we can prevent childhood obesity". EPODE is a capacity building approach aimed at reducing childhood obesity through a societal process in which local environments, childhood settings, and family norms are directed and encouraged to facilitate the adoption of healthy lifestyles in children (55). The EPODE approach is based on four critical components (also known as pillars): political commitment, public-private partnerships, social marketing principles and scientific evaluation and dissemination. From 2004 onwards the EPODE-approach has been implemented in almost 300 towns in France, Belgium and Spain and this number kept growing in the years to come.

EPODE European Network

In 2008, as more and more municipalities in several European countries decided to implement the EPODE approach, the EPODE European Network (EEN) was established. The EEN was designed to: i) raise political, institutional and scientific awareness of the relevance of local, long-term and multi stakeholder approaches to prevent childhood obesity, ii) to enrich existing EPODE approaches and iii) to facilitate dissemination of EPODE and similar large-scale community-based interventions throughout Europe (63).

Four European Universities, including the VU in Amsterdam, were approached to provide a deeper conceptualisation of the EPODE methodology and its four critical components. This EEN research was funded partly by the Directorate General for Health and Consumers from the European Public Health Programme (2003-2008) and partly by private

sponsors (i.e., Ferrero, Mars, Nestlé, Orangina Schweppes) and was coordinated by the French social marketing company Protéines. Four expert committees and the EEN Scientific Board supported the four University teams. Results and recommendations from the four studies were published in a book in 2011 (64), in a collaborative paper in 2012 (42), and disseminated at international conferences (65-67) and in multiple scientific papers (68-70).

The Department of Health Sciences from the Faculty of Earth and Life Sciences at the VU University was asked to provide a deeper conceptualisation of the fourth component of EPODE, i.e. scientific evaluation and dissemination, and to:

1) Describe EPODE as a community intervention and to present a programme theory for EPODE community interventions,

2) Advise on the evaluation of the EPODE programme and its defined programme theory using the latest insights on community intervention evaluations, and

3) Advise on the most appropriate method to measure children (weight/height) in order to assess Body Mass index (BMI) without stigmatising the children and to convince parents to allow their children to be measured without causing any distress.

The programme theory was presented as a logic model and published accordingly in collaboration with the EEN scientific board (see Chapter 2 of this thesis) (68). Results of research questions 2 and 3 were presented as a chapter in the EEN book (71). In 2015 the EEN became the EPODE International Network (EIN), the world's largest network of childhood obesity prevention. It now has 42 member programmes in 29 countries, each programme consisting of multiple communities, all implementing ICIAs following the EPODE principles.

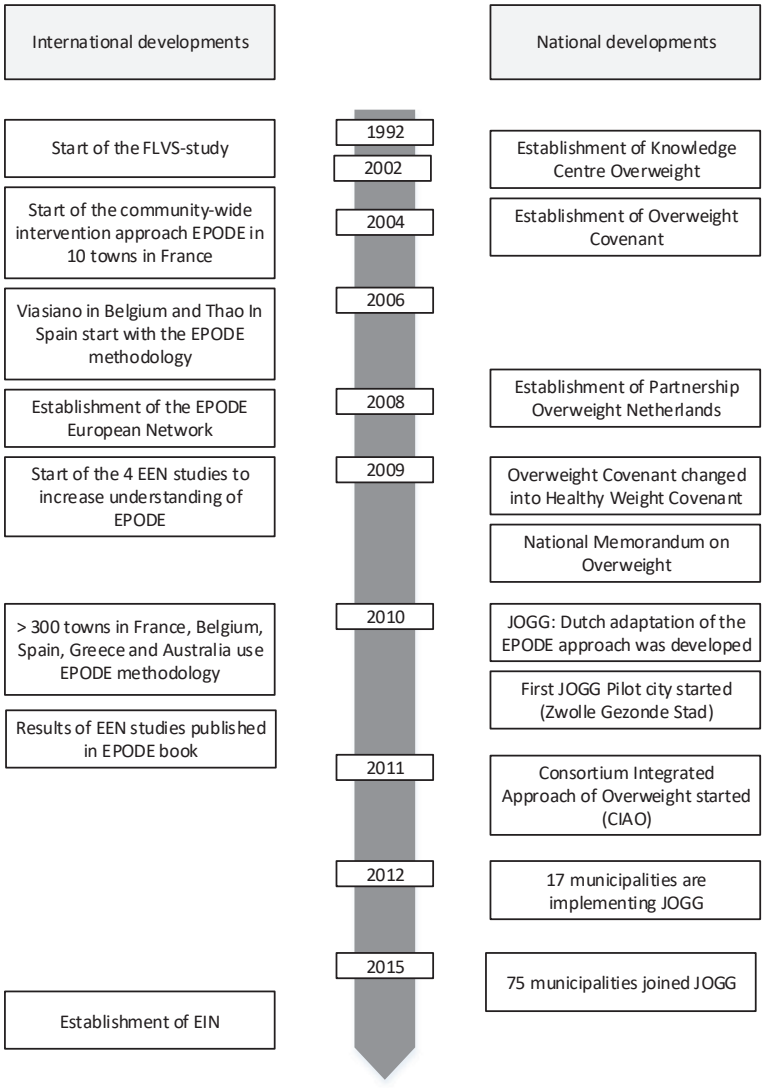


Figure 2: International and national developments related to EPODE in France and JOGG in the Netherlands

The JOGG-approach

Since 2002 there has been a growing sense of concern about overweight and obesity amongst children in Dutch society. It has been acknowledged as a serious public health issue and has moved up the political agenda. Since then, the Ministry of Health has facilitated three complementary initiatives on a national level to tackle overweight and obesity. These are: i)

the Knowledge Centre Overweight (established in 2002) to enhance knowledge about prevention and treatment of overweight, ii) the Covenant on Overweight (established in 2005), a public-private partnership, and iii) the Partnership Overweight Netherlands (established in 2008) to facilitate the development and implementation of a chronic disease management model (72). Additionally, the 2006 Public Health Forecast stated that overweight and unhealthy behaviour, especially among young people, was becoming a source of concern for public health (73).

In 2008 a comprehensive study commissioned by the Netherlands Organisation for Health Research and Development (ZonMw) recommended more practice based research within complex environments and further research into the effects of environmental determinants on behaviour (74). In addition to these national initiatives, an integrated approach at local level was seen as important. EPODE was identified as a promising method and was embraced by the Ministry of Health. In the National Memorandum of 2009 the Ministry of Health facilitated the integrated approach to tackling overweight and obesity within a community setting (75). This memorandum explicitly mentions the EPODE approach as a good example. At the same time awareness was growing within the scientific world that school-based intervention efforts alone were not effective in reversing the rising rates of childhood obesity; additional approaches involving parents and carers in both home and childcare settings were also needed (26, 36, 76, 77).

In 2010 the "Covenant on Overweight" was renamed the "Covenant Healthy Weight" (2010-2015). It united 27 participating organisations ranging from the Ministry of Health, members of local and national government, federations of private companies and non-governmental organisations (78). The aim of all these organisations was to stop the increasing rates of overweight and obesity in the Netherlands. This positive societal and political climate for the implementation of comprehensive multi-level overweight and obesity prevention efforts, and the promising results of the FLVS study and the first ten pilot cities embracing EPODE, led to the launch of the JOGG-approach in the Netherlands as a sub-division of the Covenant Healthy Weight (79, 80) (Figure 2).

'JOGG' is the acronym for 'Jongeren Op Gezond Gewicht', which means young people at a healthy weight. The JOGG-approach is based on the four critical components of EPODE but has added a fifth critical component: 'linking prevention and healthcare'. This fifth component stimulates a centralized approach to prevention and care to make it easier for parents and

children who are trying to tackle overweight or obesity to get the right help at the right place. The Partnership Overweight Netherlands contributed to the awareness of the need for and development of this critical component. The JOGG-approach focuses on a local integrated approach using proven interventions in the areas of food and physical activity, which are linked to national themes that change every year (e.g., DrinkWater, Free Exercise and Vegetables, Put your Teeth in it) (81). Launched in 2010, it aimed to have at least 75 municipalities adopt the JOGG-approach by 2015 to promote a healthy weight among young people. The JOGG-approach was first implemented in six leading municipalities: The Hague, Rotterdam, Amsterdam, Utrecht, Zwolle, and Veghel. In 2011 the national corporate partners were Albert Heijn, Albron, FrieslandCampina, Nutricia, Unilever and Zilveren Kruis Achmea.

In January 2010, after the Dutch Ministry of Health stated that it saw an integrated approach as a possible solution to the problem of overweight, and the JOGG-approach was launched, the research Consortium Integrated Approach Overweight (CIAO) was established. The purpose of this consortium, commissioned by ZonMW is to support national initiatives like the JOGG approach with scientific substantiation. It is a collaboration of five Academic Collaborative Centres (ACCs) which aim to provide elements of a coherent integrated multi-faceted approach towards obesity prevention based on the principles of EPODE (more information on CIAO can be found in Chapter 3). One of the CIAO studies was carried out by the department of Health Sciences from the Faculty of Earth and Life sciences at the VU University. It's focus was on the Evaluation Framework of ICIAs to prevent overweight and obesity in children in the Netherlands. Results of this study are to be found in this thesis.

EVALUATION OF ICIAs

It is no surprise that the complexity of ICIAs made their evaluation very complex (82-85). Evaluators need to go beyond the traditional notions of evaluation research and experimental design (50, 86-88). Although ICIAs are complex the expectation is that they will be more effective than singular individual focussed interventions because they address both distal and proximal determinants of obesity (41, 89).

For a number of years, researchers have highlighted the difficulties in finding evidence for the effectiveness of complex intervention approaches (90-92). Reasons given for apparent modest levels of impact are often methodological issues concerning the design used and

sampling methods, but also choice of data-collection methods, measures of community environment, the influence of secular trends or context and limitations in the intervention such as duration, intensity and penetration (84, 90, 93). A major issue in studying the effectiveness of complex health promotion interventions such as ICIAs is the use of randomised controlled trials (RCT) (50, 82, 94-96). Within such a comprehensive programme it is impossible to specify the independent variable, i.e. the intervention, in advance because tackling overweight and obesity means effecting changes to behaviour, but also alterations in the social, cultural and organisational environment. Moreover, in order to increase impact and sustainability it is necessary to involve target groups and stakeholders in intervention design however this often means that during the implementation process the intervention will change, and this cannot be foreseen in the planning stage (97). Another reason for limited evidence on the effectiveness of ICIAs is that short term intervention studies and evaluation designs with short-term follow up may not be able to detect changes in the size and proportions of an individual which result from small changes in behaviour (e.g. detection of changes in BMI within 1 year).

Many of these issues are to do with collecting evidence of effectiveness. When we started our research in 2009, we aimed to define one evaluation framework with clear indicators and measurement instruments that a) could be applied to ICIAs aimed at preventing overweight and obesity in children everywhere and b) would collect evidence of effectiveness. However, during the course of the research we discovered that there was no single ideal evaluation design or definitive measurement that could be applied to any ICIA. Evaluation needs to be tailored to each programme depending upon available resources (e.g. financial budget, human resources, capabilities, in-kind), the needs and success definitions of stakeholders, the health problem and the purpose of the evaluation (98). Evaluation is more than a tool to determine effectiveness, it helps to improve the initiative (98-100); to develop and sustain community partnerships (101); to assess whether an initiative has achieved its goals, how these were achieved (or why they were not) (102); and to inform and influence decision-makers at the programme-level or at policy level (98, 99). This inevitably leads to the question of how to tailor an evaluation to comprehensive programmes like ICIAs? In this thesis our focus is on the evaluation strategy for ICIAs and in particular why these evaluations are problematic. The identification of problem areas aims to find clues for improvements of ICIA evaluation and as a result optimization of the programme.

OBJECTIVE OF THIS THESIS

Given i) the importance of prevention of overweight in children, ii) the fact that an ICIA is regarded as an appropriate prevention effort to a defined complex health problem, and iii) the need to show the impact of these comprehensive intervention approaches and optimize this impact, this thesis aims to a) explore the evaluation framework of the integrated community-wide intervention approach to prevent overweight and obesity in children, b) gain an understanding of barriers to and facilitators of programme evaluation of ICIAs and c) based upon this information, to develop recommendations on how to facilitate programme evaluation of ICIAs.

OUTLINE OF THIS THESIS

To illustrate what an ICIA aimed at tackling overweight and obesity in youth looks like, a logic model of such an ICIA was developed. This logic model provides an outline of future specifics of evaluation. Chapter 2 describes the logic model of the EPODE approach. The outline of the EPODE approach and this logic model was used as a reference for the CIAO studies, whose design is described in Chapter 3. To understand the challenges and the necessary methodology of the evaluation of ICIA's a comprehensive analysis of existing evaluation frameworks was undertaken. This comprehensive analysis is described in Chapter 4. This study resulted in an evaluation framework to be used for the development of an evaluation framework for the JOGG-approaches in The Netherlands. The Evaluation Framework was translated and made suitable for use in Dutch practice. Subsequently the experiences of the first six municipalities to adopt the JOGG-approach were added to this Evaluation Framework. This guiding Evaluation Framework was renamed Evaluation Manual and offered to all JOGG programme managers and epidemiologists through a private web environment and was used as a means of evaluation training. Chapter 5 is a translation of a paper published in the Netherlands on the process and outcomes of an expert focus group on the Evaluation Framework for the integrated community-wide approach towards overweight. Chapter 6 describes the evaluation process of the Evaluation Manual that was developed and a qualitative research on factors contributing to or restricting the evaluation of community-wide interventions approaches. In Chapter 7 a case study presents these factors in more detail. Chapter 8 is the general discussion with recommendations for practice, policy and future research and a general conclusion.

REFERENCES

1. Mitchell NS, Catenacci VA, Wyatt HR, Hill JO. Obesity: overview of an epidemic. The Psychiatric clinics of North America. 2011;34(4):717-32.
2. Bleich SN, Segal J, Wu Y, Wilson R, Wang Y. Systematic review of community-based childhood obesity prevention studies. Pediatrics. 2013;132(1):e201-10.
3. Ng M, Fleming T, Robinson M, Thomson B, Graetz N, Margono C, et al. Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a systematic analysis for the Global Burden of Disease Study 2013. The Lancet. 2014;384(9945):766-81.
4. World Health Organization. Childhood overweight and obesity 2013 [cited 2016 23 May].
5. Hossain P, Kawar B, El Nahas M. Obesity and diabetes in the developing world--a growing challenge. The New England journal of medicine. 2007;356(3):213-5.
6. Olds T, Maher C, Zumin S, Peneau S, Lioret S, Castetbon K, et al. Evidence that the prevalence of childhood overweight is plateauing: data from nine countries. Int J Pediatr Obes. 2011;6(5-6):342-60.
7. Rokholm B, Baker JL, Sorensen TI. The levelling off of the obesity epidemic since the year 1999--a review of evidence and perspectives. Obes Rev. 2010;11(12):835-46.
8. World Health Organization. Facts and figures on childhood obesity 2014 [cited 2016 23 May].
9. Karnik S, Kanekar A. Childhood obesity: a global public health crisis. International journal of preventive medicine. 2012;3(1):1-7.
10. World Health Organization. Report of the commission on ending childhood obesity. Switzerland, Geneva: World Health Organization, 2016.
11. Daniels SR. The consequences of childhood overweight and obesity. Future Child. 2006;16(1):47-67.
12. Guo SS, Wu W, Chumlea WC, Roche AF. Predicting overweight and obesity in adulthood from body mass index values in childhood and adolescence. The American journal of clinical nutrition. 2002;76(3):653-8.
13. Flynn MA, McNeil DA, Maloff B, Mutasingwa D, Wu M, Ford C, et al. Reducing obesity and related chronic disease risk in children and youth: a synthesis of evidence with 'best practice' recommendations. Obes Rev. 2006;7 Suppl 1:7-66.
14. Rennie KL, Johnson L, Jebb SA. Behavioural determinants of obesity. Best practice & research Clinical endocrinology & metabolism. 2005;19(3):343-58.
15. Pereira MA. Sugar-sweetened and artificially-sweetened beverages in relation to obesity risk. Advances in nutrition (Bethesda, Md). 2014;5(6):797-808.
16. Boulos R, Vikre EK, Oppenheimer S, Chang H, Kanarek RB. ObesiTV: how television is influencing the obesity epidemic. Physiology & behavior. 2012;107(1):146-53.
17. Swinburn BA, Sacks G, Hall KD, McPherson K, Finegood DT, Moodie ML, et al. The global obesity pandemic: shaped by global drivers and local environments. Lancet. 2011;378(9793):804-14.
18. Swinburn B, Egger G. Preventive strategies against weight gain and obesity. Obes Rev. 2002;3(4):289-301.
19. De Bourdeaudhuij I, Van Cauwenberghe E, Spittaels H, Oppert JM, Rostami C, Brug J, et al. School-based interventions promoting both physical activity and healthy eating in Europe: a systematic review

within the HOPE project. Obesity reviews : an official journal of the International Association for the Study of Obesity. 2011;12(3):205-16.

20. Sacks G, Swinburn B, Lawrence M. Obesity Policy Action framework and analysis grids for a comprehensive policy approach to reducing obesity. Obes Rev. 2009;10(1):76-86.

21. Waters E, de Silva-Sanigorski A, Hall BJ, Brown T, Campbell KJ, Gao Y, et al. Interventions for preventing obesity in children. Cochrane Database of Systematic Reviews. 2011(12).

22. Sacks FM, Bray GA, Carey VJ, Smith SR, Ryan DH, Anton SD, et al. Comparison of Weight-Loss Diets with Different Compositions of Fat, Protein, and Carbohydrates. New England Journal of Medicine. 2009;360(9):859-73.

23. Katan MB. Weight-Loss Diets for the Prevention and Treatment of Obesity. New England Journal of Medicine. 2009;360(9):923-5.

24. Huang TT, Glass TA. Transforming research strategies for understanding and preventing obesity. JAMA : the journal of the American Medical Association. 2008;300(15):1811-3.

25. Stice E, Shaw H, Marti CN. A meta-analytic review of obesity prevention programs for children and adolescents: the skinny on interventions that work. Psychological bulletin. 2006;132(5):667-91.

26. Economos CD, Irish-Hauser S. Community interventions: a brief overview and their application to the obesity epidemic. J Law Med Ethics. 2007;35(1):131-7.

27. Lytle LA. Examining the etiology of childhood obesity: The IDEA study. American journal of community psychology. 2009;44(3-4):338-49.

28. Vandenbroeck IP, Goossens J, Clemens M. Foresight Tackling Obesities: Future Choices-Building the Obesity System Map. In: UK Government Office for Science, editor. UK Government's Foresight Programme ,2007.

29. Butland B, Jebb S, Kopelman P, McPherson K, Thomas S, Mardell J, et al. Foresight, Tackling obesities: future choices, Project Report. United Kingdom, London: UK Government Office for Science, 2007.

30. Hillier F, Pedley C, Summerbell C. Evidence base for primary prevention of obesity in children and adolescents. Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz. 2011;54(3):259-64.

31. Story M, Kaphingst KM, Robinson-O'Brien R, Glanz K. Creating healthy food and eating environments: policy and environmental approaches. Annu Rev Public Health. 2008;29:253-72.

32. Visscher TL, Kremers SP. How Can We Better Prevent Obesity in Children? Current obesity reports. 2015;4(3):371-8.

33. Seidell JC, Halberstadt J. The Global Burden of Obesity and the Challenges of Prevention. Annals of Nutrition and Metabolism. 2015;66(suppl 2)(Suppl. 2):7-12.

34. McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. Health education quarterly. 1988;15(4):351-77.

35. Dahlgren G, Whitehead M. Policies and Strategies to Promote Social Equity in Health. Stockholm, Sweden: Institute for Futures Studies, 1991.

36. Huang TT, Drewnowski A, Kumanyika SK, Glass TA. A systems-oriented multilevel framework for addressing obesity in the 21st century. Prev Chronic Dis. 2009;6(3 A82).

37. Romon M, Lommez A, Tafflet M, Basdevant A, Oppert JM, Bresson JL, et al. Downward trends in the prevalence of childhood overweight in the setting of 12-year school- and community-based programmes. Public Health Nutr. 2009;12(10):1735-42.

38. Bemelmans WJE, Verschuuren M, Savelkoul M, Wendel-Vos GCW. An EU-wide overview of community-based initiatives to reduce childhood obesity. The Netherlands, Bilthoven: Dutch Institute for Public Health and the Environment (RIVM), 2011.

39. Dietz WH, Gortmaker SL. Preventing obesity in children and adolescents. Annual Review of Public Health. 2001;22(1):337-53.

40. Steenbakkers M, Jansen M, Maarse H, de Vries N. Challenging Health in All Policies, an action research study in Dutch municipalities. Health Policy. 2012;105(2-3):288-95.

41. Hendriks A-M, Gubbels JS, De Vries NK, Seidell JC, Kremers SPJ, Jansen MWJ. Interventions to Promote an Integrated Approach to Public Health Problems: An Application to Childhood Obesity. Journal of Environmental and Public Health. 2012;2012:14.

42. Borys JM, Le Bodo Y, Jebb SA, Seidell JC, Summerbell C, Richard D, et al. EPODE approach for childhood obesity prevention: methods, progress and international development. Obesity Reviews. 2012;13(4):299-315.

43. Economos CD, Tovar A. Promoting health at the community level: thinking globally, acting locally. Childhood obesity (Print). 2012;8(1):19-22.

44. Lakerveld J, Brug J, Bot S, Teixeira PJ, Rutter H, Woodward E, et al. Sustainable prevention of obesity through integrated strategies: The SPOTLIGHT project's conceptual framework and design. BMC public health. 2012;12:793.

45. Millar L, Kremer P, de Silva-Sanigorski A, McCabe MP, Mavoa H, Moodie M, et al. Reduction in overweight and obesity from a 3-year community-based intervention in Australia: the 'It's Your Move!' project. Obes Rev. 2011;12 Suppl 2:20-8.

46. Stein D, Weinberger-Litman SL, Latzer Y. Psychosocial perspectives and the issue of prevention in childhood obesity. Frontiers in public health. 2014;2:104.

47. de Silva-Sanigorski AM, Bell AC, Kremer P, Nichols M, Crellin M, Smith M, et al. Reducing obesity in early childhood: results from Romp & Chomp, an Australian community-wide intervention program. The American journal of clinical nutrition. 2010;91(4):831-40.

48. Thury C, de Matos CV. Prevention of childhood obesity: a review of the current guidelines and supporting evidence. South Dakota medicine : the journal of the South Dakota State Medical Association. 2015;Spec No:18-23.

49. Craig P, Dieppe P, Macintyre S, Michie S, Nazareth I, Petticrew M. Developing and evaluating complex interventions: the new Medical Research Council guidance. The BMJ. 2008;337:a1655.

50. Whitehead TL, Traditional Approaches to the Evaluation of Community Based Interventions: Strengths and Limitations The Cultural Ecology of Health and Change (CEHC) Working Papers Series, Working Paper 15 September 2002 ed. Maryland: University of Maryland, Department of Anthropology; 2002. p. 11.

51. Boutilier M, Cleverly S, Labonte R. Community as a setting for health promotion. In: Poland BD, Green LW, Rootman I, editors. Settings for health promotion: linking theory and practice. Thousand Oaks: Sage; 2000. p. 250-79.

52. Green LW, Sim L, Breiner H. Evaluating Obesity Prevention Efforts: A Plan for Measuring Progress. Committee on Evaluating Progress of Obesity Prevention Effort FaNB, Institute of Medicine, editor. US, Washington, DC: National Academies Press;; 2013.

53. Economos CD, Hyatt RR, Goldberg JP, Must A, Naumova EN, Collins JJ, et al. A community intervention reduces BMI z-score in children: Shape Up Somerville first year results. Obesity (Silver Spring, Md). 2007;15(5):1325-36.

54. Sanigorski AM, Bell AC, Kremer PJ, Cuttler R, Swinburn BA. Reducing unhealthy weight gain in children through community capacity-building: results of a quasi-experimental intervention program, Be Active Eat Well. Int J Obes. 2008;32(7):1060-7.

55. Borys J-M, Le Bodo Y, Richard D. EPODE, a methodology to prevent childhood obesity at community level. In: Borys J-M, Le Bodo Y, De Henauw S, Moreno LA, Romon M, Seidell JC, et al., editors. Preventing Childhood Obesity, Epode Euriopean Network Recommendations. 1. France, Cachan: Lavoisier Publishing; 2011. p. 27-44.

56. Puska P, Nissinen A, Tuomilehto J, Salonen JT, Koskela K, McAlister A, et al. The community-based strategy to prevent coronary heart disease: conclusions from the ten years of the North Karelia project. Annu Rev Public Health. 1985;6:147-93.

57. Ronda G, Van Assema P, Candel M, Ruland E, Steenbakkers M, Van Ree J, et al. The Dutch Heart Health community intervention 'Hartslag Limburg': results of an effect study at individual level. Health Promotion International. 2004;19(1):21-31.

58. Farquhar JW, Fortmann SP, Flora JA, Taylor CB, Haskell WL, Williams PT, et al. Effects of communitywide education on cardiovascular disease risk factors. The Stanford Five-City Project. JAMA : the journal of the American Medical Association. 1990;264(3):359-65.

59. Egger G, Swinburn B. An "ecological" approach to the obesity pandemic. Bmj. 1997;315(7106):477-80.

60. Davison KK, Birch LL. Childhood overweight: a contextual model and recommendations for future research. Obesity Reviews. 2001;2(3):159-71.

61. Doak CM, Visscher TLS, Renders CM, Seidell JC. The prevention of overweight and obesity in children and adolescents: a review of interventions and programmes. Obesity Reviews. 2006;7(1):111-36.

62. Summerbell CD, Waters E, Edmunds LD, Kelly S, Brown T, Campbell KJ. Interventions for preventing obesity in children. Cochrane Database Syst Rev. 2005(3):CD001871.

63. Le Bodo Y, Walter L, Harper P, Richard P, Borys J-M. The EPODE European Network. In: Borys J-M, Le Bodo Y, De Henauw S, Moreno LA, Romon M, Seidell JC, et al., editors. Preventing Childhood Obesity, Epode European Network Recommendations. 1. France, Cachan: Lavoisier Publishing; 2011. p. 45-60.

64. Borys JM, Le Bodo Y, De Henauw S, Moreno LA, Romon M, Seidell JC, et al. Preventing Childhood Obesity, Epode European Network Recommendations. Cachan cedex France: Lavoisier; 2011. 265 p.

65. Van Assche J, De Henauw S, Reynaert H. Childhood obesity prevention: in need of urban governance? . 11th International conference on Obesity (ICO), ; Stockholm2010.

66. Van Koperen TM, Seidell JC, Visscher TLS, Greaux KM. The EPODE Evaluation Framework. 11th International Congress on Obesity (ICO); Stockholm: Obesity Reviews 2010:11 (Suppl1); 2010.

67. Alam T, Romon M. PPP and Childhood Obesity Management Recommandations for Public-Private Partnerships Management in the Epode Methodology. EEN Symposium; Bruxelles2011.

68. Van Koperen TM, Jebb SA, Summerbell CD, Visscher TL, Romon M, Borys JM, et al. Characterizing the EPODE logic model: unravelling the past and informing the future. Obes Rev. 2013;14(2):162-70.

69. Gracia-Marco L, Vicente-Rodriguez G, Borys JM, Le Bodo Y, Pettigrew S, Moreno LA. Contribution of social marketing strategies to community-based obesity prevention programmes in children. Int J Obes. 2011;35(4):472-9.

70. Gracia-Marco L, Moreno LA, Vicente-Rodríguez G. Impact of Social Marketing in the Prevention of Childhood Obesity. Advances in Nutrition: An International Review Journal. 2012;3(4):611S-5S.

71. Van Koperen TM, Visscher TLS, Seidell JC. Scientific evaluation and dissemination. In: Borys JM, Le Bodo Y, De Henauw S, Moreno LA, Romon M, Seidell JC, et al., editors. Preventing Childhood Obesity, Epode European Network Recommendations. Cachan cedex France: Lavoisier; 2011. p. 145 -79.

72. Renders CM, Halberstadt J, Frenkel CS, Rosenmöller P, Seidell JC, Hirasing RA. Tackling the problem of overweight and obesity: the Dutch approach. Obesity Facts. 2010;3(4):267-72.

73. de Hollander AEM, Hoeymans N, Melse JM, van Oers JAM, Polder JJ. Zorg voor gezondheid - Volksgezondheid Toekomst Verkenning 2006 (Public Health Forecast 2006). The Netherlands, Bilthoven: RIVM, 2006 Contract No.: 270061003.

74. Kremers S, Martens M, Reubsaet A, De Weerdt I, De Vries N, Jonkers R, editors. Programmeringsstudie overgewicht. Maastricht: Kwak & Van Daalen & Ronday; 2008.

75. Ministerie van VWS & Ministerie van Jeugd en Gezin. 'Nota overgewicht. Uit balans: de last van overgewicht'. The Hague: Ministerie van Volksgezondheid, Welzijn en Sport; 2009. p. 25.

76. Birch LL, Ventura AK. Preventing childhood obesity: what works? Int J Obes (Lond). 2009;33 Suppl 1:S74-81.

77. Branca F, Nikogosian, H. and Lobstein,T. (eds). The challange of obesity in the WHO European Regoin and the strategies for response. . Copenhagen: WHO; 2007.

78. TNO. TNO Monitor Gezond Gewicht, Nulmeting (determinanten van) beweeg- en eetgedrag van kinderen (4-11 jaar), jongeren (12-17 jaar) en volwassenen (18+ jaar) The Netherlands, Leiden TNO, Behavioural and Societal Sciences, 2011 March 2011. Report No.: 031.20644

79. Van Koperen TM, Seidell JC. Overgewichtpreventie, een lokale aanpak naar Frans voorbeeld. Praktische Pediatrie. 2010;2:10-4.

80. Rosenmöller JsaP. JOGG approach in The Netherlands. In: Network EE, editor. EPODE European Network. Paris: Proteïnes; 2011.

81. JOGG. JOGG: Wat We Doen (Eng: 'JOGG: What we Do') The Netherlands, Den Haag2015 [cited 2016 24-05-2016]. Available from: https://jongerenopgezondgewicht.nl/wat-we-doen.

82. Atienza AA, King AC. Community-based health intervention trials: an overview of methodological issues. Epidemiol Rev. 2002;24(1):72-9.

83. Campbell M, Fitzpatrick R, Haines A, Kinmonth AL, Sandercock P, Spiegelhalter D, et al. Framework for design and evaluation of complex interventions to improve health. Bmj. 2000;321(7262):694-6.

84. Nastasi BK, Hitchcock J. Challenges of evaluating multilevel interventions. American journal of community psychology. 2009;43(3-4):360-76.

85. Stokols D. Translating Social Ecological Theory into Guidelines for Community Health Promotion. American Journal of Health Promotion. 1996;10(4):282-98.

86. Nutbeam D. Evaluating Health Promotion—Progress, Problems and solutions. Health Promotion International. 1998;13(1):27-44.

87. Macdonald G, Veen C, Tones K. Evidence for success in health promotion: suggestions for improvement. Health education research. 1996;11(3):367-76.

88. Sanson-Fisher RW, Bonevski B, Green LW, D'Este C. Limitations of the randomized controlled trial in evaluating population-based health interventions. American journal of preventive medicine. 2007;33(2):155-61.

89. Seidell J, Halberstadt J. Tegenwicht: Prometheus, Uitgeverij; 2011.

90. Merzel C, D'Afflitti J. Reconsidering community-based health promotion: promise, performance, and potential. Am J Public Health. 2003;93(4):557-74.

91. Potvin L, Richard L. The evaluation of community health promotion programmes In: Ziglio E, editor. Evaluation in Health Promotion Principles and Perspectives Copenhagen: World Health Organization; 2001. p. 213-40.

92. Summerbell CD, Hillier F. Community interventions and initiatives to prevent obesity. In: Crawford D, Jeffery RW, Ball K, J. B, editors. Obesity epidemiology: From Aetiology to Public Health. Second Edition ed: Oxford University Press Inc; 2010. p. 395-408.

93. Koepsell TD, Wagner EH, Cheadle AC, Patrick DL, Martin DC, Diehr PH, et al. Selected methodological issues in evaluating community-based health promotion and disease prevention programs. Annu Rev Public Health. 1992;13:31-57.

94. Goodman RM. Principles and tools for evaluating community-based prevention and health promotion programs. Journal of Public Health Management and Practice. 1998;4(2):37-47.

95. WHO European Working Group on Health Promotion Evaluation. Health Promotion Evaluation: Recommendations to Policymakers. Copenhagen, Denmark: World Health Organisation, 1998.

96. Rosen L, Manor O, Engelhard D, Zucker D. In Defense of the Randomized Controlled Trial for Health Promotion Research. American Journal of Public Health. 2006;96(7):1181-6.

97. Koelen MA, Vaandrager L, Colomér C. Health promotion research: dilemmas and challenges. Journal of Epidemiology and Community Health. 2001;55(4):257-62.

98. Rossi PH, Lipsey MW, Freeman HE. Evaluation: A systematic approach (chapter 2: Tailoring Evaluation). 7 ed. Thousand Oaks, CA: Sage; 2004.

99. Harris MJ. Evaluating public and community health programmes. 1 ed. US, CA, San Fransisco: Jossey-Bass; 2010.

100. Newcomer KE, Hatry HP, Wholey JS. Meeting the Need for Practical Evaluation Approaches: An Introduction. In: Wholey JS, Hatry HP, Newcomer KE, editors. Handbook of Practical Program Evaluation 2. San Francisco: John Wiley & Sons, Inc.; 2004. p. xxxiii-xliv.

101. Butterfoss FD, Francisco VT. Evaluating community partnerships and coalitions with practitioners in mind. Health promotion practice. 2004;5(2):108-14.

102. Patton MQ. Utilization-focused evaluation. 4th ed. New York: Guilford; 2008.

Chapter 2

Characterizing the EPODE logic model:

unravelling the past and informing the future

Marije van Koperen

Susan Jebb

Caroline Summerbell

Tommy Visscher

Monique Romon

Jean-Michel Borys

Jacob C Seidell

Obesity Reviews 2013;14, 162-170

ABSTRACT

EPODE ('Ensemble Prévenons l'Obésité De Enfants' or 'Together let's Prevent Childhood Obesity') is a large-scale, centrally coordinated, capacity-building approach for communities to implement effective and sustainable strategies to prevent childhood obesity. Since 2004, EPODE has been implemented in over 500 communities in six countries. Although based on emergent practice and scientific knowledge, EPODE, as many community-wide programmes, lacks a logic model depicting key elements of the approach. The objective of this study is to gain insight in the dynamics and key elements of EPODE and to represent these in a schematic logic model. EPODE's process manuals and documents were collected and interviews were held with professionals involved in the planning and delivery of EPODE. Retrieved data were coded, themed and placed in a four-level logic model. With input from international experts, this model was scaled down to a concise logic model covering four critical components: political commitment, public and private partnerships, social marketing and evaluation. The EPODE logic model presented here can be used as a reference for future and follow-up research; to support future implementation of EPODE in communities; as a tool in the engagement of stakeholders; and to guide the construction of a locally tailored evaluation plan.

INTRODUCTION

Obesity prevention is an international public health priority and there is growing evidence of the impact of overweight and obesity on short- and long-term functioning, health and well-being. Internationally, childhood obesity rates continue to rise in some countries (e.g. Mexico, India, China, Canada), although there is emerging evidence of a slowing of this increase or a plateauing in some age groups and in most European countries, the United States and Australia (1,2). The evidence is strong that once obesity is established, it is difficult to reverse through interventions (3) and tracks through to adulthood (4) strengthening the case for primary prevention in children.

Although a number of governments are acting to implement strategies for obesity prevention, the available knowledge base on which to develop a platform of obesity prevention actions and base decisions about public health and other interventions to reduce the risk of obesity has, to date, remained unclear. An important reason is the multitude of factors influencing the development of overweight and obesity. There is not one universal causing factor in the development of overweight and obesity. And although (mostly experimental) research provides insight to causal factors driving overweight and obesity, the strongest evidence is derived from the biological and behavioural research area. However, determinants of overweight and obesity lie not only within biological elements of the individual and its behaviour, but also in the environment (5,6). These upstream environmental factors of obesity and overweight have been described in the International Obesity Task Force causal web (7) and more comprehensively in the UK Government's Foresight Programme (8). To prevent overweight and obesity, it is therefore remarkable that most interventions are focused on single variables or within a single setting and rarely take a multi-level or 'system-based' approach.

To address and study the complex web of individual and environmental determinants of overweight and obesity in children, a community-wide strategy is necessary. Some lessons can be drawn from large community-wide pro-grams to reduce cardiovascular disease risk, such as the Stanford Five-City project (9), the Pawtucket Heart Health programme (10) and the Dutch Hartslag Limburg programme (11). In the context of obesity prevention, some school-based prevention programmes have been successful (12–16) and data are beginning to emerge from a small number of comprehensive community-wide intervention approaches targeting

obesity in children (17–20). A community-wide strategy should target change in the child's behaviour (related to energy intake and expenditure) through changes in its physical, socio-cultural, economic and political environment (5,21–23). Moreover, this multifaceted strategy should be long term to evaluate and monitor changes in knowledge, attitudes, behaviours, as well as adiposity out-comes (5,24).

The French EPODE programme is a community-wide programme that aims to prevent overweight and obesity in children through a multi-activity, multi-setting and multi-stakeholder approach (25). Although based on experiences of a school-based nutrition programme (26), EPODE was originally developed and implemented 'outside' of an academic context by programme managers and marketing professionals with a strategic emphasis on social marketing techniques and broader stakeholder engagement (public and private) at national and local levels (25). As many other community-wide programmes, it lacked a well-conceptualized programme theory or logic model (27,28). From the initial group of 10 EPODE communities, the programme has grown and EPODE has now been implemented in more than 500 communities in France, Spain, and Belgium, and more recently also in Greece, Australia, Mexico and The Netherlands. This widespread implementation not only illustrates the popularity of the programme with politicians and policy makers, but also attracts significant interest from the academic community. Although this does not necessarily mean that the programme is effective and successful.

This paper aims to learn more on the dynamics and key elements of the EPODE programme tackling childhood overweight and obesity to support future research and evaluation. To clarify the process elements of the EPODE programme, a logic model approach is used (29). A logic model is a graphic representation of the programme and the outcomes to be achieved and helps to identify the key elements of the programme. Although logic models can take many forms, the basic features are input or resources, activities, outputs, and short-, intermediate- and long-term outcomes (29). With help from EPODE stakeholders, documents, existing health promotion models and socio-ecological models, the overarching EPODE logic model will be shaped. This report describes the process used to clarify the overarching EPODE logic model.

METHODOLOGY

Data collection

In order to develop the EPODE logic model, we searched for logic models representing a health promotion community programme for the prevention of obesity and overweight in children similar to EPODE. It was decided to use a comprehensive logic model for health promotion as a general conceptual basis or reference model, which could be used for the retrospective modelling of the EPODE programme theory. The model by Saan and De Haes (30) is a comprehensive theoretical basis that follows the basic structure of a logic model and connects the different aspects of health promotion from organisation and interventions through intervention results and determinants resulting inequality of life (30). This model is based on the work of Green and Kreuter (31), Nutbeam (32) and the Ottawa Charter (33). The model is widely known and used in The Netherlands to plan and structure the implementation and evaluation of health promotion programmes.

To gain insight into the EPODE approach, information was collected from documents and experiences, organisation and implementation descriptions of the programme in EPODE communities, and mapped to this framework. First, documents (in English and Dutch) were collected through the EPODE programme managers and the Central Coordination Teams from France (EPODE) and its affiliates in Belgium (VIASANO) and Spain (THAO). The researcher asked the national programme coordinators for documents describing the EPODE approach. French documents were asked to be translated in English. The documents consisted of 2 local programme plans, approximately 50 local press releases, some programme descriptions and prints from different websites, a grant application, 1 scientific article, 1 DVD visualizing local activities, several PowerPoint presentations by the National Coordination Teams on different occasions, evaluation data collection lists, a dozen leaflets and posters specified for target groups, a programme roadmap and a toolkit for local use. A full report of used documents is available upon request by the corresponding author. These documents were examined, coded, and information was tagged as input, activities, outputs and outcomes.

It became apparent that activities were performed and outcomes reached on four successive levels of the programme, namely: central organisation, local organisation, community and the child. Second, information on EPODE was retrieved through conducting semi-structured interviews from February to May 2009 with stakeholders involved in the

EPODE approach on both local and central levels. At a central level, three interviews were held with the national programme coordinators from EPODE and its affiliates in Belgium (VIASANO) and Spain (THAO). At a local level, interviews were held with local programme managers of four EPODE cities in France and with one area programme manager, responsible for the implementation of the EPODE approach in multiple communities. In two of those interviews, the health representative was present and participated in the interview. Selection criteria for the cities were (i) to be working with the EPODE approach for at least 4 years; (ii) to differ in the number of inhabitants; and (iii) to differ in geographical area in France. The model by Saan and De Haes (30) guided the construction of the interview guide.

Information was collected on the organisation, implementation (e.g. activities, collaborations, communication and programme satisfaction) and evaluation of the programme at both local and national levels, and on programme goals and objectives. The interviewer spoke English, as did all of the national level interviewees. All local level interviewees spoke French; a translator was present during the interviews. All interviews were minuted, recorded and transcribed. The interviews were then coded through the method of open coding followed by themed coding or axial coding. The themes were in line with the elements of the reference framework of Saan and De Haes (30).

Data analyses

Coding the information retrieved from the documents and the interviews was performed in the context of the model by Saan and De Haes (30). After coding, the elements were tagged as input, activities, outputs or outcomes on the four successive levels of the programme. The data showed EPODE to be a multi-level strategy; different strategies were implemented at central level, local level, in multiple settings in the designated community, and directed at the child and its family.

Identified elements were placed within each level and organized by the researcher in input, activities and output using the process of forward and backward mapping (29). This resulted in a four-level logic model comprising 79 variables (see Supporting Information Figure S1). However, this comprehensive logical model includes elements not present, and maybe not even desirable, in every EPODE community. Moreover, it was not easy to comprehend and did not leave room for tailoring to the local circumstances. Therefore, experts and members of EPODE national programme coordination teams were asked to review and refine the 79

variables of logic model. These experts were: members of the Scientific Workgroup of the European EPODE Network, members of the Board of the European EPODE Network, and eight selected experts from the research advisory committee. The eight experts were familiar with the EPODE approach, had expertise in the implementation and/or evaluation of community-based interventions and obesity and overweight prevention strategies. In the expert meetings, the logic model was discussed and elements were considered and subsequent iterations were further reviewed by the experts. This process finally led to consensus on 13 key elements placed in a linear logic model and accepted by all as the overarching EPODE logic model.

RESULTS

Retrieved data presented EPODE as centrally coordinated and locally implemented comprehensive multifaceted and multi-level community-based intervention programme directed to prevent obesity and overweight in children. The main input and activities reported by interviewees and presented in the documents could be labelled as: generating political commitment; establishing public and private partnerships; and the use of social marketing strategies and monitoring and evaluation. The ultimate goal of the EPODE approach, as stated by the interviewees and presented in the documents, is to enable community stakeholders to implement effective and sustainable strategies to promote healthier lifestyles and prevent childhood obesity. The central coordination team offers communities a complete programme to be implemented at a local level, with clear guidelines, support, training, materials and coordination from central level.

The overarching EPODE logic model, back drafted from existing and ongoing EPODE programmes, clarified with help from local and central professionals and experts, is presented in figure 1 with the long-term goal: to reduce the percentage of children with overweight as much as possible. In this logic model, the following elements can be identified: key elements in planning, organisation and implementation; four integrated organisational and delivery levels and the four critical components (also referred to as 'the EPODE pillars') of the EPODE approach.

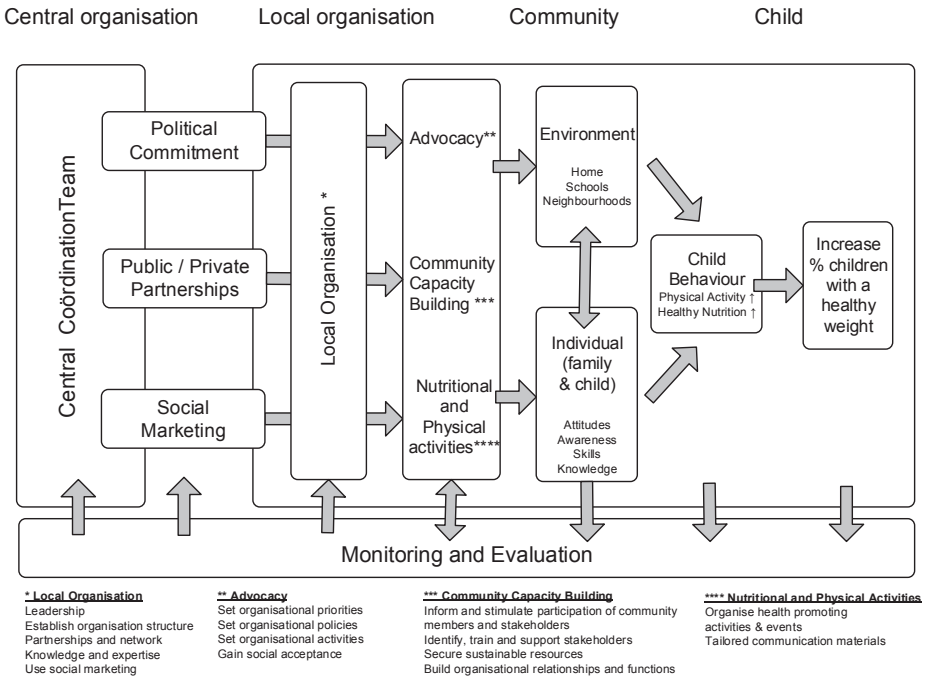


Figure 1: EPODE logic model

In the EPODE approach, central coordination emphasizes 'the EPODE pillars' to enhance programme sustainability and community involvement. These pillars are:

• *Political commitment* – It is hypothesized that before a programme starts in the designated area, formal political commitment from leaders of key organisations that influence national/federal/state and local policies, environments and childhood settings is to be essential in programme funding, sustainability and networking. All interviewed programme managers report the presence of a local enthusiastic actor or ambassador engaged with and moved by the health problem at hand. This ambassador contacted the EPODE central coordination team for guidelines and support to implement the programme at a local level. In some cases, this was the representative or the mayor, if not, the central coordination provided materials to this ambassador to support advocacy activities to gain local political support. According to the interviewed programme managers and the representatives, political involvement is important for agenda setting at both strategic and tactical levels within a local government, and the pursuit of partnerships with local organisations, both public and private. Local political

involvement is confirmed by the signing of a charter with the central organisation, promising financial, managerial and organisational support. When the representative is part of the local team, decisions can be taken quickly due to short lines with the town council. However, the representative is not always part of the local team.

• *Public–private partnerships* – Public–private partnerships are encouraged to participate in the EPODE approach with monetary and non-monetary resources such as knowledge or products. Commitment of private partners is formalized with a signed charter. Participation takes place at central and local levels. The local programme manager is in all cases public funded. Pursuing involvement of private partners at a local level seems to depend on the attitude of the central coordination scheme, awareness of the programme manager of the potential value of public–private partnerships for the implementation of EPODE, or the pursuit of programme goals. The interviewed local programme managers and representatives give different reasons for the involvement of private partners in the programme. Reasons mentioned were: monetary funding, a location to display healthy messages, being part of the community, awareness raising of the EPODE approach, and to assist in tailoring activities.

One programme manager reported a lack of success into entering partnerships with private parties due to lack of time and expertise. The programme managers also indicate the value of collaboration with public partners as resources of knowledge and expertise. For instance, the involvement of community welfare organisations experienced in working with children and adolescents of low socio-economic status; students assisting in data collection; parent associations organizing activities; dieticians and general practitioners involved in collection of weight management data and local awareness raising; and policymakers from sectors other than health as members of the steering committee.

• *Monitoring and evaluation* – The central coordination team provides guidelines and measurement tools to collect data for the process and impact evaluation. Data on process (of implemented activities, programme manager satisfaction), output (number of participants, activities, meetings, time spent on programme) and outcome (body mass index) of the community programme are collected by the local organisation and sent to the central coordination team. The central coordination team analyse the local data and disseminate the data to each community and to local and national partners.

All programme managers indicate that the central coordination team specifies in the guidelines what data to collect and how this should be done. However, not all data are being collected accordingly. Mentioned barriers include lack of time, lack of personnel, expertise and knowledge; a disappointing return of questionnaires; programme managers were neglected admission to schools to measure children; and fear of 'disappointing' results. All interviewed programme managers do say that collection of height and weight measurements receives their primary attention in data collection. Programme goals and objectives are included in the national guidelines and only one programme manager (with a background in evaluation and epidemiology) reported determining their own programme goals and objectives and had written a project plan tailored to the local situation. Other programme managers followed the guidelines from the central coordination team.

• *Social marketing* – The last critical component of the EPODE approach is the use of social marketing techniques to develop and disseminate healthy messages to different target groups. These messages are developed by central coordination with the use of experts, literature and field experience. The messages relate to a specific health behaviour or determinant(s) of health behaviour and are directed at specified (segmented for age and social economic status) groups within the community. For more information on the creation of EPODE marketing materials, see Henley and Raffin (34) and the paper by Borys et al. (25). Objectives of the messages are to empower, mobilize, raise awareness or to inform the segmented target population. Examples of the segmented target groups are: schoolchildren (different age groups), parents, teachers, pre-school professionals and general practitioners. The EPODE messages are simple, concentrate on one target behaviour at the time, and reinforce with practical activities and resources. Local programme managers receive soft copies of the messages and tailor them with local information before printing. All programme managers use the EPODE tools developed at a central level.

The interviews and documents showed EPODE to work on four integrated levels, namely: the level of the central organisation, the level of local organisation, the community level and the child level (figure 2). Each level provides input for the next level. Output or outcomes on each level should reflect and provide feedback to the performance of the implementation (activities and input) of that level or of preceding levels. Interviews with national coordinators and

documents show a central organisation comprised of a central coordination team supported by a scientific committee.

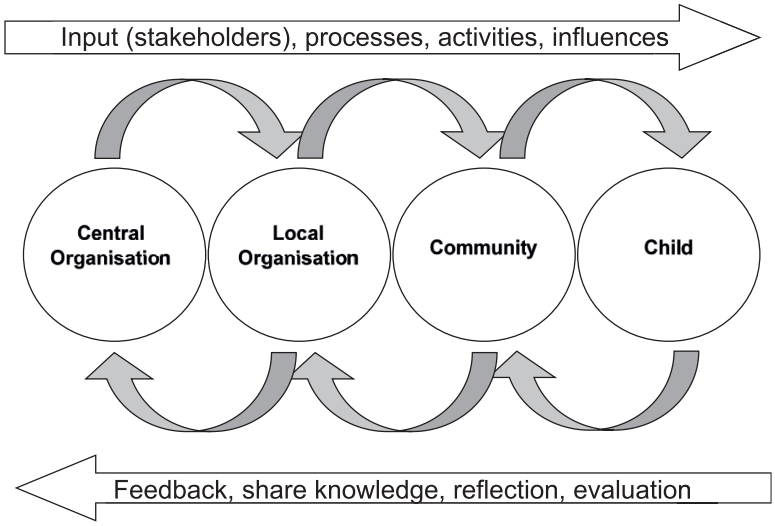


Figure 2: Levels of the EPODE approach

The central coordination team is responsible for coordinating and implementing the connection between the four pillars. Activities comprise national coordination and dissemination of the programme, national societal and political agenda setting, public and private funding of the programme implementation and coordination, creation of communication materials, data collection, analyses and evaluation of the local programme, training of local programme managers, and the scientific substantiation and recruitment of new cities. The central coordination team is based within a social marketing agency; employees are professionals experienced in nutrition, health education, social marketing, press relations, monitoring and evaluation, communication, physical activity and text writing.

The scientific committee assembles professionals and scientists in the field of nutrition, physical exercise, behavioural science and paediatrics. This scientific committee is consulted in the content of training and the development of social marketing materials. In all documented EPODE communities, the local organisational level is coordinated by the local programme manager appointed by the mayor and funded by local government. He or she assembles and steers a local organisation team and is responsible for the advocacy of the programme. In both tasks, he or she is supported by the health representative or the mayor. The central

coordination team provides local programme managers with guidelines for the local organisation. The local programme managers all indicate that they follow the guidelines the central coordination team provided them. On some occasions, they have to improvise to adapt to changing local circumstances. Local supportive professionals (known as stakeholders) are members of the local organisation. Although members differ between the communities, the following groups are represented in the local organisation: health professionals (e.g. general practitioner, dietician, school doctor and school nurse), community key figures, parental associations, and interested professionals from local public and private organisations. The organisational outline varies depending on available resources in the local community (time, knowledge, expertise and personnel), existing networks and stakeholders' needs. The local organisation varies from a local team combined with a steering commit-tee or only a steering committee supported by working groups. In each community, the local organisation is responsible for advocacy, community capacity building, and activities stimulating healthy nutrition and physical activity, and the linkage between the four EPODE pillars.

Activities associated with advocacy are aimed at obtaining a broad political commitment to the programme and of the urgency of overweight and obesity prevention in children; at gaining policy support from departments outside the health sector to the programme and programme aims, and social acceptance of the programme and of the programme aims. This is believed to be necessary to create sustainable healthy living conditions for children that encourage exercise and healthy nutrition. This includes the direct physical and socio-cultural environment of the child in their neighbourhood, at school and at home. The communities are not all equally active in advocacy to achieve environmental change. One programme manager indicated that stimulating participation of public organisations, associations, and professionals, and collaboration between them, was their primary concern instead of stimulating involvement of politicians and policy makers from other governmental sectors. Another community found collaboration with a non-health department difficult and time consuming due to differences in language and goals.

The EPODE approach stimulates participation and active involvement of all community members (i.e. teachers, school board, local industries, small and medium enter-prises, general practitioners, nurseries, pharmacies, sport clubs, welfare and parental associations). The EPODE guidelines provide examples of invitational letters and informative meetings. Other activities associated with community capacity building are: the spread of communication

materials in the community for change in cognition and attitude of the target group and their social system towards healthy nutrition and physical activity in everyday life; regular training sessions provided by the central coordination team for the local programme manager; roadmaps and toolkits developed by the central coordination team delivered at a local level to support social networks and the local organisation; and the initiation of activities by the community and of securing sustainable resources (means and people).

Nutritional and physical activities (e.g. sporting events at school or in the neighbourhood, nutrition classroom courses and communication tools) are primarily directed at the children with suspected spill over effects to parents. All activities are approved by the central coordination team and reviewed by the central scientific committee. The activities are intended to create a positive change in attitude, and increase knowledge on what a healthy diet is and the daily amount of physical activity for good health, and increase skills to eat healthily and be physically active. The implementation of the activities directed at children and their parents (social environment) takes place at several settings, namely neighbourhoods, schools and at home.

Two of the interviewed programme managers have made alterations to the proposed activities in consultation with community welfare organisations to fit to the needs, assets and capability of people from a low social economic status, while another programme manager confirmed that while she had not made changes she was not bound to use the activities proposed by the central coordination team. The combination of advocacy, community capacity building, and activities to promote healthy nutrition and physical activities is hypothesized to stimulate a sustainable change in the social and physical environment of the child. This change combined with a positive change in the psychosocial and cognitive determinants of risk factors as knowledge, skills and attitudes is believed to stimulate the child's healthy behaviour and reach the final outcome of the programme: to reduce the percentage of children with overweight in the community as much as possible.

CONCLUSION

The aim of this research is to learn more on the dynamics and key elements of the EPODE approach tackling childhood overweight and obesity. The retrospective construction of the EPODE approach with input from local and national coordinators, document analyses and

expert opinion gave a clear but robust overview of the way the programme intents to work. Although it would be preferred to develop a programme based on a theoretical model, this is a pragmatic approach for making it possible to support future refinement of a complex multi-component health promotion approach developed within a community using expertise and enthusiasm of community members. Moreover, this model can be used to support future research and the development of an evaluation framework of similar programmes worldwide.

A retrospective logic model design through document analysis and interviews has been used before. A study that tried to compare programme theories used to develop multi-component community approaches concluded that programme theories are not explicated in programme plans for community-based approaches (27). Consequently, these programme theories were constructed in retrospect similar to used methodology of underlying study. An important condition to make retrospective construction possible is the availability of thorough programme documentation and supplemented with stakeholder information. Within EPODE, this information was available.

Moreover, it is inherent to a community-wide multi-component approach, as EPODE is, that there is continuous change and development. Even when a logic model has been created at the start of the programme, it is subject to change during programme evolution. A condition therefore of a logic model of an Integrated Community-wide Intervention Approach is that it is flexible enough to make alterations possible during programme implementation. The construction of a logic model is an important element in the implementation and evaluation of these comprehensive community-wide health promotion programmes. However, a fundamental characteristic of such a programme is that it is developed in accordance with community members following their needs and available resources. And although the EPODE guidelines provide programme managers and communities with information on implementation and evaluation, the programmes differ per community. This is caused by variation in available resources such as time, knowledge, expertise, existing collaborations, organisational structure, involved actors, and used activities. For this reason, it is not possible to construct one logic model that is an exact fit to all EPODE communities. The logic model presented here therefore describes the conceptual foundations of the programme but leaves the methods, intervention choice, and the explication and quantification of desired short-term, medium-term and long-term outcomes to the communities. In doing so, it provides the outline of the activities to be undertaken and can be extended following desired programme

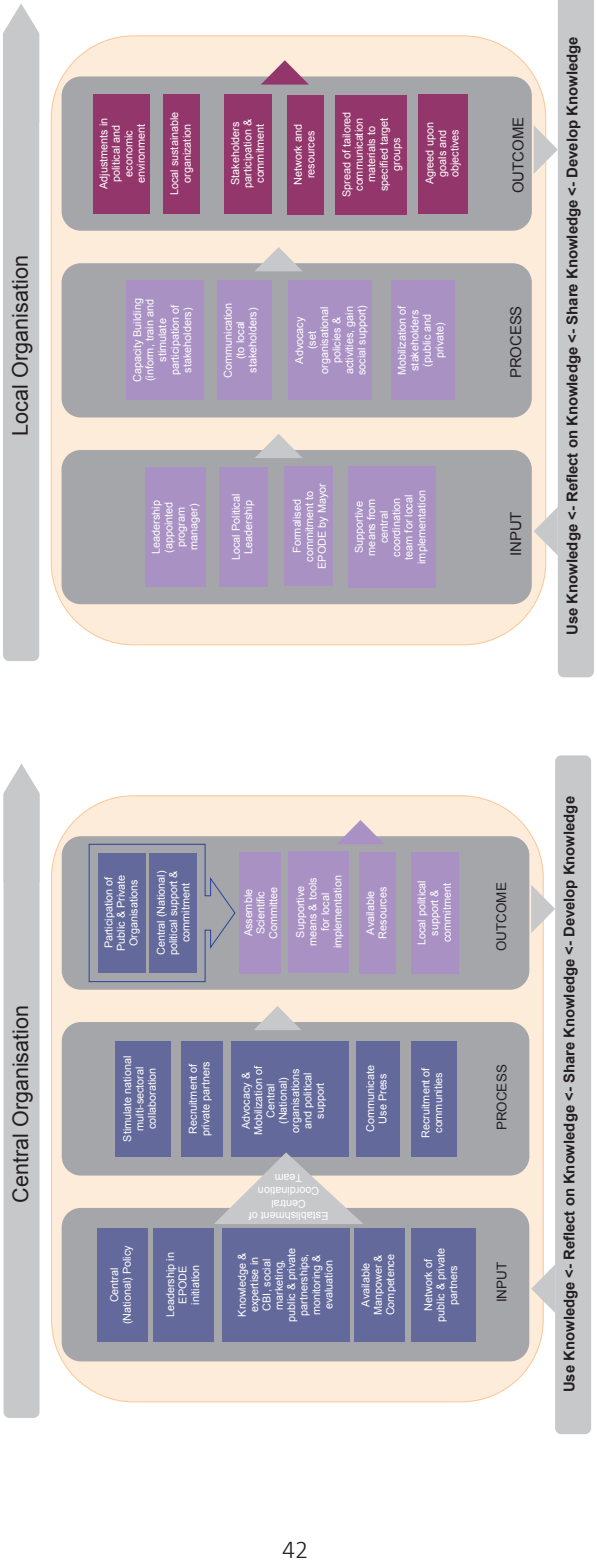
objectives of the community, the needs of stakeholders and programme planners, programme budget and the context of the programme.

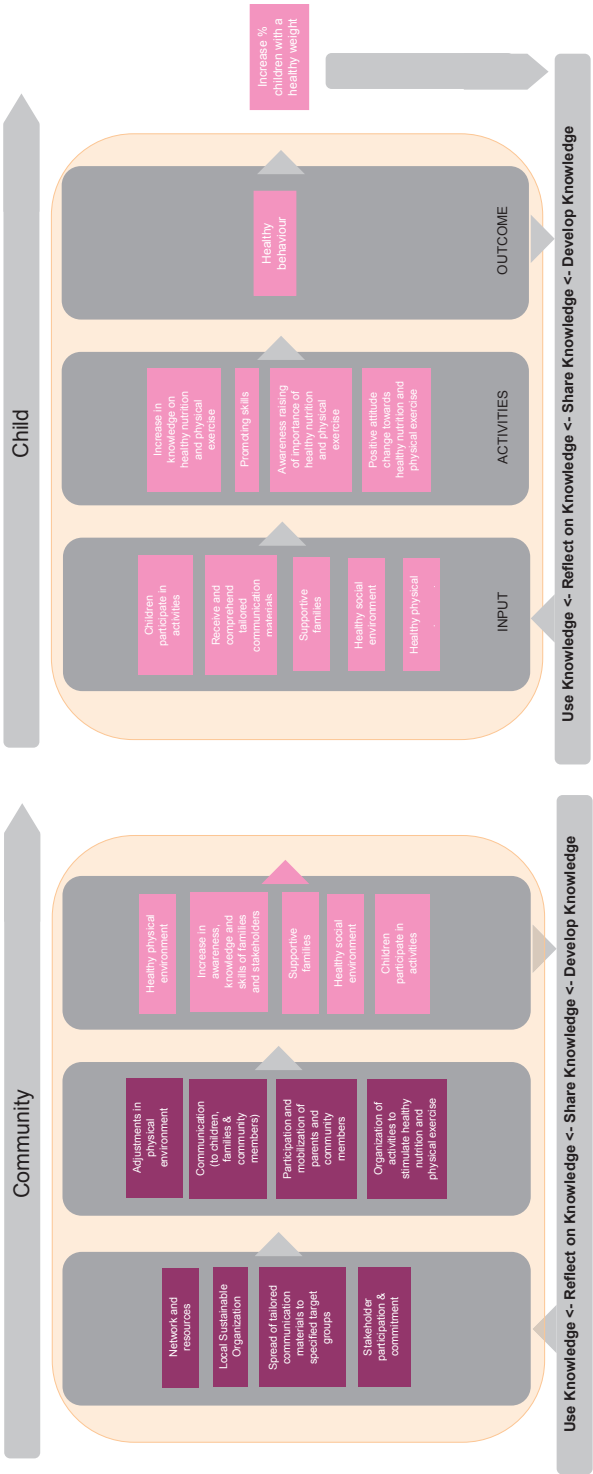
The here presented EPODE logic model follows the outline of a basic logic model. It is a linear model. However, a community-wide approach is not a linear approach; many linkages, interactions and reciprocal consultations exist between the key elements. The EPODE logic model focuses on the principal linkages, and as such it can be considered an overarching or umbrella model for this community-wide approach to the prevention of excess weight in children. It can be used by current and future EPODE central coordination teams and by local programme managers in other countries and communities to support the implementation of the methodology, to explain the programme logic to newcomers and outsiders, and to stimulate stakeholder engagement while leaving room for local fine-tuning and interpretation. Additionally, the model will be supportive to the evaluation (planning) of current and future EPODE programmes.

A logic model is not only a necessary prerequisite to a full process evaluation but it can be a supportive tool for evaluation planning, to set programme goals and objectives, define evaluation questions, and choose the necessary measurements to answer these evaluation questions. In a broader context, the EPODE model will help to scale up the EPODE methodology across multiple communities across the world in a coordinated manner. Although based on existing theoretical models, it is not clear if the EPODE logic model has any relationship with programme success yet. This will be evaluated in the next few years.

Follow-up research will concentrate on continuous evidence based on improvement of local logic models, and the construction of an evaluation framework for EPODE and the like based upon the logic model presented here, existing evaluation frameworks, expert views and implementation experiences. In doing so, the logic model will be extended and fine-tuned and might become more of a programme theory. This overarching model can be a first step to learn more on the dynamics, causalities and key elements of a community-wide programme directed to prevent overweight and obesity in children, and as such add to a knowledge base on community-wide overweight prevention to be used in future research.

Supporting Information Figure S1: EPODE four level logic model




Community
Network and resources
Local Sustainable Organization
Spread of tailored communication materials to specified target groups
Stakeholder participation & commitment
Adjustments in physical environment
Communication (to children, families & community members)
Participation and mobilization of parents and community members
Organization of activities to stimulate healthy nutrition and physical exercise
Healthy physical environment
Increase in awareness, knowledge and skills of families and stakeholders
Supportive families
Healthy social environment
Children participate in activities
Use Knowledge <- Reflect on Knowledge <- Share Knowledge <- Develop Knowledge
Child
Children participate in activities
Receive and comprehend tailored communication materials
Supportive families
Healthy social environment
Healthy physical
INPUT
Increase in knowledge on healthy nutrition and physical exercise
Prompting skills
Awareness raising of importance of healthy nutrition and physical exercise
Positive attitude change towards healthy nutrition and physical exercise
ACTIVITIES
Healthy behaviour
OUTCOME
Use Knowledge <- Reflect on Knowledge <- Share Knowledge <- Develop Knowledge
Increase % children with a healthy weight

REFERENCES

1. Olds T, Maher C, Zumin S et al. Evidence that the prevalence of childhood overweight is plateauing: data from nine countries. Int J Pediatr Obes 2011; 6: 342–360.
2. Rokholm B, Baker JL, Sorensen TI. The levelling off of the obesity epidemic since the year 1999 – a review of evidence and perspectives. Obes Rev 2010; 11: 835–846.
3. Waters E, de Silva-Sanigorski A, Hall BJ et al. Interventions for preventing obesity in children. Cochrane Database Syst Rev 2011; (12): CD001871.
4. Whitaker RC, Wright JA, Pepe MS, Seidel KD, Dietz WH. Predicting obesity in young adulthood from childhood and parental obesity. N Engl J Med 1997; 337: 869–873.
5. Kumanyika SK, Mini symposium on obesity: overview and some strategic considerations. Annu Rev Public Health 2001; 22: 293–308.
6. Uauy R, Caleyachetty R, Swinburn B. Childhood obesity prevention overview. In: Waters E, Swinburn B, Seidell J, Uauy R(eds). Preventing Childhood Obesity Evidence, Policy and Practice. Blackwell Publishing Ltd: Oxford, 2010, pp. 22–30.
7. International Obesity Task Force. Caught in the Web. A new perspective on social factors affecting obesity. 1999.
8. Vandenbroeck IP, Goossens J, Clemens M. Building the Obesity System Map. Foresight Tackling Obesities: Future Choices. 2007.[WWW document]. URL http://www.foresight.gov.uk (accessed December 2011).
9. Farquhar JW, Fortmann SP, Flora JA et al. Effects of community wide education on cardiovascular disease risk factors. The Stanford Five-City Project. JAMA 1990; 264: 359–365.
10. Killen JD, Robinson TN, Telch MJ et al. The Stanford Adolescent Heart Health Programme. Health Educ Q 1989; 16: 263–283.
11. Schuit AJ, Wendel-Vos GC, Verschuren WM et al. Effect of 5-year community intervention Hartslag Limburg on cardiovascular risk factors. Am J Prev Med 2006; 30: 237–242.
12. Flores R, Dance for health: improving fitness in African–American and Hispanic adolescents. Public Health Rep 1995; 110:189–193.
13. Goran MI, Reynolds K. Interactive multimedia for promoting physical activity (IMPACT) in children. Obes Res 2005; 13: 762–771
14. Robinson T, Reducing children's television viewing to prevent obesity: a randomized trial. JAMA 1999; 282: 1561–1567.
15. Spiegel SA, Foulk D. Reducing overweight through a multidisciplinary school-based intervention. Obes Res 2006; 14: 88–96.
16. Doak CM, Visscher TLS, Renders CM, Seidell JC. The prevention of overweight and obesity in children and adolescents: a review of interventions and programmemes. Obes Rev 2006; 7: 111–136.
17. Taylor RW, McAuley KA, Barbezat W, Farmer VL, Williams SM, Mann JI. Two-year follow-up of an obesity prevention initiative in children: the APPLE project. Am J Clin Nutr 2008; 88: 1371–1377.
18. de Silva-Sanigorski AM, Bell AC, Kremer P et al. Reducing obesity in early childhood: results from Romp & Chomp, an Australian community-wide intervention programme. Am J Clin Nutr2010; 91: 831–840.
19. Economos CD, Hyatt RR, Goldberg JP et al. A community intervention reduces BMI z-score in children:

Shape Up Somerville First Year Results [ast]. Obesity (Silver Spring) 2007; 15: 1325–1336.

20. Summerbell CD, Hillier F. Community interventions and initiatives to prevent obesity. In: Crawford D, Jeffery RW, Ball K, J B(eds). Obesity Epidemiology: From Aetiology to Public Health. Oxford University Press Inc: Oxford, 2010, pp. 395–408.

21. Swinburn BA, de Silva-Sanigorski AM. Where to from here for preventing childhood obesity: an international perspective. Obesity (Silver Spring) 2010; 18(Suppl. 1): S4–S7.

22. World Health Organisation W. Global Strategy on Diet, Physical Activity and Health. World Health Organisation: Geneva, Switzerland, 2004.

23. Swinburn B, Egger G, Raza F. Dissecting obesogenic environments: the development and application of a framework for identifying and prioritizing environmental interventions for obesity. Prev Med 1999; 29: 563–570.

24. Swinburn BA, Evidence framework for childhood obesity prevention. In: Waters E, Swinburn B, Seidell J, Uauy R (eds) .Preventing Childhood Obesity Evidence, Policy and Practice. Blackwell Publishing Ltd: Oxford, UK, 2010, pp. 49–56.

25. Borys JM, Le Bodo Y, Jebb SA et al. EPODE approach for childhood obesity prevention: methods, progress and international development. Obes Rev 2012; 13: 299–315.

26. Romon M, Lommez A, Tafflet M et al. Downward trends in the prevalence of childhood overweight in the setting of 12-year school- and community-based programmemes. Public Health Nutr2009; 12: 1735–1742.

27. Harting J, Van Assema P. Exploring the conceptualization of programme theories in Dutch community programmes: a multiple case study. Health Promot Int 2011; 26: 23–36.

28. Merzel C, D'Afflitti J. Reconsidering community-based health promotion: promise, performance, and potential. Am J Public Health 2003; 93: 557–574.

29. McLaughlin JA, Jordan GB. Using logic models. In: Wholey J,Hatry HP, Newcomer KE (eds). Handbook of Practical Programme Evaluation. Jossey-Bass: San Francisco, 2004, pp. 7–32.

30. Saan H, De Haes W. Gezond effect bevorderen. Het organiseren van effectieve gezondheidsbevordering. NIGZ: Woerden,2005.

31. Green LW, Kreuter MW. Health Promotion Planning: An Educational and Ecological Approach, 3rd edn. Mayfield Publishing Company: Mountain View, CA, 1999.

32. Nutbeam D, Effective health promotion programmemes. In: Pencheon D, Guest C, Melzer D, Muir Gray JA (eds). Handbook of Public Health Practice. Oxford University Press: Oxford, 2001, pp. 190–199.

33. World Health Organisation W. Ottawa Charter for Health Promotion. Geneva. 1986.

34. Henley N, Raffin S. Social marketing to prevent childhood obesity: the EPODE programme. In: Waters E, Swinburn B, Seidell JC, Uauy R (eds). Preventing Childhood Obesity: Evidence, Policy and Practice. Wiley-Blackwell: Oxford, 2010, pp. 243–252.

Chapter 3

Design of CIAO, a research programme to support the development of an integrated approach to prevent overweight and obesity in the Netherlands

Marije van Koperen
Rianne van der Kleij
Carry Renders
Matty Crone
Anna-Marie Hendriks
Maria Jansen
Vivian van de Gaar
Hein Raat
Emilie Ruiter
Gerard Molleman
Jantine Schuit
Jaap Seidell

BMC Obesity 2014;1:5

ABSTRACT

Background

The aim of this paper is to describe the research aims, concepts and methods of the research Consortium Integrated Approach of Overweight (CIAO). CIAO is a concerted action of five Academic Collaborative Centres, local collaborations between academic institutions, regional public health services, local authorities and other relevant sectors in the Netherlands. Prior research revealed lacunas in knowledge of and skills related to five critical elements of the integrated approach of overweight prevention in children, namely political support, parental education, implementation, social marketing and evaluation. CIAO aims to gain theoretical and practical insight of these elements through five sub-studies and to develop, based on these data, a framework for monitoring and evaluation.

Methods/design

For this research programme, mixed methods are used in all the five sub-studies. First, problem specification through literature research and consultation of stakeholders, experts, health promotion specialists, parents and policy makers will be carried out. Based on this information, models, theoretical frameworks and practical instruments will be developed, tested and evaluated in the communities that implement the integrated approach to prevent overweight in children. Knowledge obtained from these studies and insights from experts and stakeholders will be combined to create an evaluation framework to evaluate the integrated approach at central, local and individual levels that will be applicable to daily practice.

Discussion

This innovative research programme stimulates sub-studies to collaborate with local stakeholders and to share and integrate their knowledge, methodology and results. Therefore, the output of this programme (both knowledge and practical tools) will be matched and form building blocks of a blueprint for a local evidence- and practice-based integrated approach towards prevention of overweight in children. The output will then support various communities to further optimize the implementation and subsequently the effects of this approach.

BACKGROUND

Childhood overweight (and obesity) is one of the most serious public health challenges of the twenty-first century in the world (1). In the Netherlands, the number of overweight children increased sharply in the last decade. In 2010, more than 14% of Dutch children aged between 2 and 21 were overweight, of which almost 2% were obese (2). To stabilize or decrease the current prevalence of overweight, it is widely accepted that interventions should be comprehensive, targeted at multiple levels, address the drivers of overweight and should be directed at children and their environment (3-10). In this paper we will refer to such comprehensive programmes as the 'integrated approach'.

The prevalence rates and the severity of overweight, especially regarding complications associated with obesity, put it high on the political and public health agenda of policy makers and funding agencies in the Netherlands. They are becoming increasingly aware that an integrated approach might be the only sustainable solution to this so-called wicked problem of overweight. A wicked problem is defined as a complex problem that prevails in society, with multiple interwoven determinants and for which evidence for the effectiveness of potential solutions is often lacking (11). Driven by the urgency of tackling this extensive and serious public health problem and the growing awareness that the integrated approach might be the only sustainable solution, multiple Dutch municipalities have initiated integrated approaches on overweight and obesity prevention in the last decade (12). Additionally, in 2009, the Dutch Ministry of Health recommended an integrated approach based upon the French EPODE programme as a possible solution to tackle overweight in The Netherlands (13).

EPODE (or Together Let's Prevent Childhood Obesity) is a French integrated community-wide intervention approach. It aims to prevent overweight and obesity in children aged 0–12 years and their families through a multi-activity, multi-setting and multi-stakeholder approach (14, 15). This comprehensive approach is coordinated at a central level. The focus is on promoting healthy behaviours regarding the importance of healthy eating and regular physical activity (14-16). At the community-level, a programme manager is nominated by local authorities. This programme manager is not only trained by EPODE, but is also provided with tools and instruments that facilitate local implementation. EPODE identified four critical components in its integrated approach: political commitment, public and private partnerships, social marketing and evaluation (14, 15).

It is expected that the number of municipalities in the Netherlands that implement an integrated approach will further increase in the coming years since the Minister of Health actively supported the integrated approach by the establishment of the Dutch JOGG central coordination team in 2010. JOGG is the Dutch acronym for Youth on Healthy Weight and is a centrally coordinated and locally implemented integrated community-wide intervention approach based on EPODE. In fact, the Dutch government has set the target of the number of cities joining the JOGG-approach in 2015 at 75. In addition to the four critical components of EPODE, the JOGG-approach formulated a fifth component: the integrated pathways between prevention and care. The five critical components of the JOGG-approach are part of a logic model which is shown in figure 1 (in grey).

To optimize the implementation of the JOGG-approach, and subsequently its effectiveness, innovative research is needed. Moreover, local health promotion specialists have indicated that they are in need of tools and guidelines to support the implementation and evaluation of this integrated approach targeting overweight and obesity (17). However, the immediate demand for action by funders and policymakers leaves no time for thorough development of the integrated approach (e.g. theoretical development, qualitative testing, modelling, feasibility testing). Researchers have to adjust their traditional research methods to deliver knowledge and guidelines following the continuous evolution of policy and practice. Action research is specifically recommended to study such programmes because it validates the dynamic processes through feedback in order to adjust the approach (18-20). The two main functions of action research are action and evaluation. The action function is supposed to support action and to stimulate the progress of the intervention. It is assumed that this immediate feedback helps practitioners to decide how to continue, thus literally stimulating and guiding action (21). The evaluation function seeks to monitor and ascertain processes and outcomes of interventions or actions. Such an evaluation serves to legitimize a programme and increase its accountability.

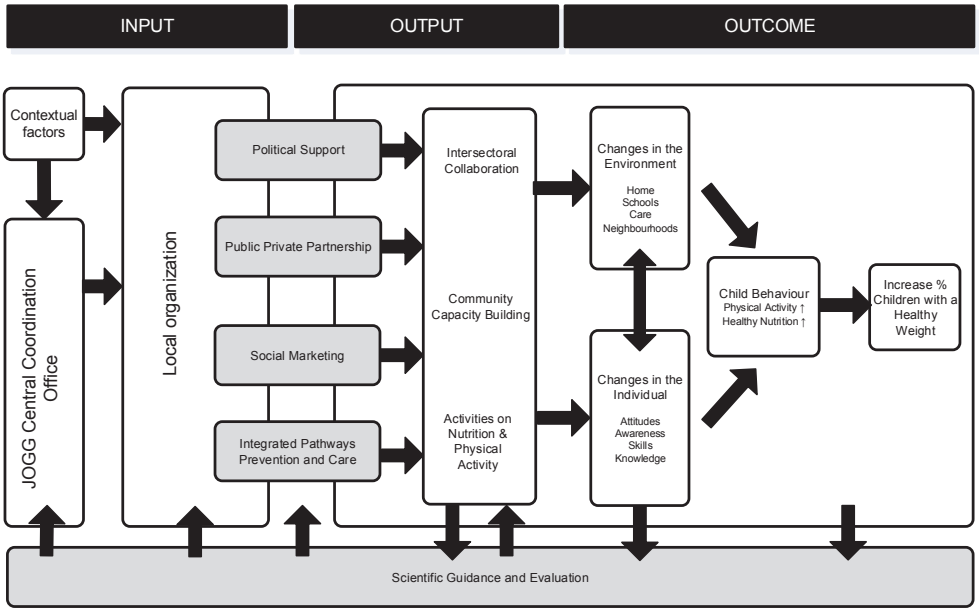


Figure 1: JOGG model

This logic model has been based upon the EPODE logic model (15). It has been developed in the beginning of sub-study 5 by MVK, the JOGG Central Coordination Office and the first six JOGG communities. A clear difference between the two models is the starting point of the four critical components. For the Dutch situation, the developers agreed to move the critical components more to the right of the model, to the local organization, since development and implementation of these components is mainly at local level. Also a fifth pillar was added to the JOGG model: integrated pathways prevention and care. The JOGG model is being used as a model of reference for implementation and evaluation of the local JOGG approach by JOGG Central Coordination Office and the JOGG communities. Moreover, CIAO uses this model to design and frame its research. The JOGG model has not been published previously.

Consortium integrated approach of overweight

After the Dutch Ministry of Health had mentioned the integrated approach as a possible solution to tackle overweight (13), the research consortium CIAO was established in January 2010. This consortium consists of five Academic Collaborative Centres (ACCs) and aims to gain insight and knowledge in key-elements of the integrated approach towards overweight and obesity prevention.

An ACC is a local collaboration between academic institutions, regional public health services, local authorities and other relevant sectors. Each involved ACC aims to promote knowledge exchange between municipalities, regional Public Health Services, academic public health departments and other local stakeholders on specific public health issues (22, 23). This knowledge exchange within an ACC stimulates the translation of scientific knowledge into practical products, services and facilities (22, 24). Moreover, it offers a unique opportunity to share processes and methodology for an effective and sustainable prevention strategy for overweight at the local level. Through collaboration, researchers can gather complementary evidence that may elucidate the picture as a whole rather than as separate and independent parts. Also the diversity of scientific, tactical and practical knowledge and skills within the ACCs can lead to cross-fertilization and new insights within CIAO. Each of the five ACCs involved in CIAO prioritize the prevention of overweight and obesity.

CIAO started with an inventory study of (inter)national interventions proven effective or promising directed at the primary prevention of overweight and obesity in children and adults and their conditions for successful implementation. Literature studies, surveys and workshops were conducted with health promotion professionals and parents in addition to interviews with experts (25). Also more than 30 interviews were held with health promotion professionals, policymakers and researchers involved in the five ACCs. The EPODE logic model (15) was used as a framework to guide data-analysis.

It appeared that many of the theoretically essential and critical elements of the EPODE approach need further definitions and operationalization (25). For instance, 'intersectoral policy and political commitment', 'social marketing' and 'evaluation' need to be further developed. Additionally, it became clear that currently a lot of potentially effective interventions have been developed to stimulate healthy dietary and physical activity behaviour in families, schools or neighbourhoods, however only a few are implemented in an appropriate and sustainable way. Furthermore, many interventions are applied in a very fragmented way. To reach an effective integrated approach, it is important to work towards more cohesion and intersectoral collaboration. It also became clear that it is necessary to further develop the role of parents in regards to their parenting skills and pedagogical knowledge within different sectors of the integrated approach. This development is especially important within the integrated approach because the participation of parents plays a central role in most interventions especially if young children are involved (26). Finally, many sectors have

indicated a need for a comprehensive evaluation framework that can be used to evaluate and monitor the processes and outcomes of the integrated approach (25).

Based on the inventory study, CIAO will continue to further develop a blueprint for a national framework of evidence-and practice-based integrated approach towards local prevention of overweight and obesity. The research programme will consist of five sub-studies, conducted by five research teams integrated in the ACCs, which together will constitute the building blocks of such a blueprint.

According to both the JOGG-approach and EPODE, political commitment is a critical component and is identified by CIAO as a key-element for a successful implementation of the integrated approach. Since determinants of overweight cannot only be found in the domain of public health, but also in other domains such as safety, spatial planning, economics that may influence the physical and/or social environment (more upstream determinants)(27), involvement of these responsible local government sectors is integral in changing these determinants (28). In short, both political commitment and intersectoral collaboration between health and non-health domains are important for the success of an integrated approach (29, 30). However, it is still not clear how this can be positively influenced (25, 29). Therefore, the first main research question for CIAO is: *How can intersectoral collaboration between policy sectors within municipalities result in integrated policies with an effective, easy-to-implement, well-described plan of action?*

The reduction of inequalities in health is an important target in public health policies of WHO Europe and the EU. Overweight and obesity are positively correlated to low-income and low education populations, leading to a high prevalence of overweight and obesity in disadvantaged neighbourhoods (31-33). The reach of interventions in these neighbourhoods is, however, often rather limited. To adapt or develop interventions that connect with the needs, wishes and perceptions of the population in these areas, JOGG should stimulate the use of social marketing strategies. However, the CIAO inventory study revealed that in the Netherlands, social marketing is a relatively new health promotion concept and needs further explication to fully understand the working mechanisms in order to stimulate local use and evaluation (25).

Additionally, parental skills and knowledge are key determinants of children's behaviour. To change prevalence rates of overweight and obesity in children by improving

energy-balance related behaviours, parental support is crucial (34-36). Existing interventions in the Netherlands focus mainly on behaviour change in children and lack sufficient attention to parental support (25, 26). This has led to the second main research question of CIAO: *How can current interventions and integrated policies be reinforced by using up-to-date parenting support, and by adaptations increasing the reach in disadvantaged neighbourhoods using social marketing strategies, resulting in effective, easy-to-implement preventive interventions?*

Moreover, it is important to gain insight into factors that influence the implementation processes of the integrated approach and interventions, especially in disadvantaged neighbourhoods and into strategies to further optimize the use of these factors. Therefore, a thorough monitoring and evaluation of the implementation process is necessary, and process and effect indicators should be routinely measured. For this purpose, it is important that consensus is reached with respect to the indicators that are used to measure the progress and outcome of the integrated approach. The third study question for CIAO to answer is: *How can integrated policies be implemented in disadvantaged neighbourhoods, and how can process and effect indicators be routinely measured and applied in the development and implementation of effective local integrated policies promoting healthy weight in youth?*

In order to address these questions, CIAO has designed five sub-studies directed at the prevention of overweight and obesity in children:

1) Guiding and monitoring the process of political commitment for intersectoral collaboration leading to integrated policy,
2) Influencing reach and effect of community interventions by guiding and monitoring social marketing strategies,
3) Strengthening parenting styles and practices in existing interventions,
4) Guiding the intended adoption and implementation processes in an integrated approach,
5) Developing a theory and practice based evaluation framework.

It is essential that in each of the sub-studies several of the participating ACCs collaborate so that the consortium can optimally benefit from the vast experience and expertise available in these centres. Research will be carried out to improve the programme design and implementation of the JOGG-approach as it is rolled out.

METHODS/DESIGN

Study design

All five sub-studies will follow the same research cycle as shown by figure 2. They will start with an identification phase in which the research question will be specified. In this phase, interviews will be held with experts, parents, health promotion specialists and local stakeholders, and literature search and reviews will be conducted.

In the development phase, a framework, theoretical model, tool, or guidelines will be constructed based upon results from the identification phase. In the testing phase, the developed materials will be tested in practice and will be evaluated. Both quantitative and qualitative research methods will be used in this evaluation. In the adaptation and finalization phase, evaluation results from the test phase will be used to adapt and optimize the developed materials. Finally, the developed materials and gained knowledge will be the building blocks for a blueprint for a national framework of evidence-based and practice-based integrated approach towards local prevention of obesity.

The results of the five sub-studies will inform a well-rounded answer to the three main research questions. Research methodology, data-collection, data-analyses and outcomes will be matched and coordinated. To increase understanding and readability, the various sub-studies will be presented here separately (see table 1 for a concise overview of the sub-studies).

This study is designed as a prospective observational study of children and adolescents undergoing an intensive combined lifestyle intervention during one year for their severe obesity. The treatment programme has either a 2 months or a 6 months inpatient period.
The Medical Ethics Committee of VU University Medical Center Amsterdam has approved the study design, protocols and informed consent procedure. This study is a collaboration with a study that aims to provide insights into the effectiveness and cost-effectiveness of the interventions (37).

Figure 2: Research outline of CIAO

Sub-study 1: Political-administrative support

The aim of this study is to understand the process of intersectoral collaboration leading to an integrated public health policy to prevent childhood overweight and obesity. A multiple-case study design will be used, and a qualitative research approach will be adopted. In this research interviews, online questionnaires and an analysis of policy documents will be used to collect data among several local governmental organizations (i.e., our cases).

In *the identification phase*, operational criteria of integrated public health policies will be developed by using a literature review and the Behaviour Change Wheel (38) as a theoretical framework. This is required in order to analyse the policy content in the upcoming studies. Furthermore, a conceptual framework, which describes the process of developing integrated public health policies, will be developed by using interviews and theoretical reflections. Subsequently, interventions for the development of integrated public health

policies will be explored by interviewing local governmental officials and key-informants within the policy making process.

Interview data will be collected in two small-sized Dutch local governments *in the development phase* to obtain insight into the factors that were hampering or facilitating intersectoral collaboration. By comparing these cases, insight into the effects of implementation style on interventions aimed at local governmental officials will be derived.

In *the testing phase*, the conceptual framework will be applied in two relatively large Dutch local governments. The aim is to explore to what extent this conceptual framework might be able to illuminate the process of developing integrated public health policies. Additionally, the definition of integrated public health policies will be used to determine if the policy content of these local governments can be considered 'integrated.' After that, the conceptual framework will be used to evaluate the effect of a resource that was developed in New South Wales, Australia to assist local governments in developing a specific type of integrated public health policy, i.e., an active living policy. Interviews with general managers, directors of community services, health officials and environment and recreation officials and a document analysis of policies developed in the included municipalities will be used to collect data about the policy process and policy content.

In *the adaptation and finalization phase*, focus groups will be held with actors at the strategic and tactical levels within the three Dutch local governments. The focus will primarily be finding solutions for identified barriers in our previous studies.

Sub-study 2: Social marketing

Research has shown that community involvement may contribute to improved outcome effects as well as more sustainable programmes with better reach and impact (16, 39-41). It is argued that to address childhood overweight and obesity, multiple settings need to be targeted (i.e. individual, family, school and community) (42-47). In their brief overview of community interventions and their application to the obesity epidemic, Economos and Irish-Hauser (48) conclude that “involving the community in any of the initiatives helps researchers to pinpoint the specific needs of the community, as well as to identify assets and untapped

Table 1: a concise overview of the 5 sub-studies of CIAO

Sub-study #	Theme	ACCs	Research phases			
			Identification Phase	*Development phase*	*Testing Phase*	*Adaptation & Finalization phase*
1	Political-administrative support	Limburg	- Literature review on operational criteria of integrated public health policies - Interviews with local governmental officials and key-informants, and theoretical reflections to gain insight in the process of developing integrated public health policies - Interviews with key-informants within the policy process to explore existing 'interventions for the development of integrated public health policies'	- Develop a conceptual framework which describes the process of developing integrated public health policies.	- Apply developed conceptual framework - Interviews with local governmental officials to gain insight in hampering or facilitating factors for intersectoral collaboration - Comparison of cases to gain insight in the effects of implementation style on interventions aimed at local governmental officials Extra: - Test and evaluate the developed framework in Australia (NSW) - data-collection through interviews with General Managers, Directors of Community Services, Health officials and Environment and Recreation officials, and a document analysis.	- Focus groups with actors at strategic and tactical levels within Dutch local governments to find solutions for previously identified barriers - Refinement of the developed conceptual framework based on the outcomes of the previous studies - Developing a program or policy resource that might be able to stimulate or facilitate the development of integrated public health policies
2	Social marketing	CEPHIR/Erasmus/ GGD Rotterdam	- Benchmarks - Analyses of Determinants of healthy weight among children - Selecting case-studies (interventions to promote healthy weight in childhood based on Social Marketing approach)	- Monitoring case-studies - Develop practical monitoring tool	- Evaluation of case-studies using developed monitoring format	- Adapting monitoring tool for Dutch setting - Overview of determinants of applying social marketing
3	Implementation	Noordelijk Zuid-Holland	- Systematic Review of design and quality of implementation research regarding complex integrated programs targeting overweight - Consultation with experts and local project managers	- Construction of process evaluation plan & several instruments to evaluate the innovation process	- Longitudinal case-studies (5x): Interviews, questionnaires, focus groups, observational research document analyses & semi-action research social network analysis	- An overview of the level and determinants of the innovation process of the integrated approach - Guidelines/ indicators for the innovation process

					- Parents versus teachers, the relation between task-orientation and implementation	- Adaptation of framework Fleuren et al [59] (for innovation process of the integrated approach)
4	Strengthening parenting styles and practices in existing interventions	AMPHI Nijmegen	- Analyses existing data: attitudes professionals and parents on overweight - Literature search of the role of parenting in interventions to prevent overweight in children - Analyses of existing interventions for children and attached parental interventions - Focus groups to gain more insight and get specific examples of difficult daily life situations in which mothers experience problems in promoting healthy eating and physical activity among their children	- Development of a web-based parenting intervention (with the aim of strengthening existing overweight preventing interventions in children) - Development of an 'local pedagogical message regarding overweight and obesity' applicable by all local professionals working with children and their parents	- Testing the effectiveness of this web-based intervention in a two-armed cluster randomized controlled trial - Focus groups with parents to improve the textual content of the ' local pedagogical message' - Effect and process evaluation of implementation	- Web-based parenting intervention to prevent overweight in children - local pedagogical message
5	Monitoring & Evaluation	VU University Amsterdam/ Windesheim University Zwolle	- Description of EPODE logic model - Evaluation literature - Interviews with Dutch experts - Comprehensive analyses of evaluation frameworks	- Development of evaluation manual (1.0) and evaluation tools - Development of evaluation training - JOGG program goals and objectives - Development evaluation planning matrix	- Use of Evaluation Manual (1.0) by JOGG municipalities - Focus groups on evaluation manual and evaluation training - Feedback on evaluation tools and evaluation planning matrix - Data-collection from all CIAO sub-studies inserted in evaluation framework	- Adaptation and Finalization of: evaluation manual (2.0), evaluation planning matrix, evaluation training

resources and solutions". This is exactly the idea behind the use of social marketing within health promotion. This study will focus on monitoring and evaluating social marketing techniques applied in programmes to promote healthy weight in childhood and to develop a monitoring tool to improve the outcomes of (parts of) programmes developed with social marketing. According to French et al., social marketing strategies aim to achieve voluntary behaviour change by taking the needs and wishes of the target audience as the starting point and from there, trying to understand how to best promote the desired behaviour using an integrated, tailored approach (49). Social marketing strategies aim to incorporate the community and act on an ecological level (50-53), which has led to successful examples worldwide of programmes promoting healthy lifestyles among children and their families (54-58).

In *the identification phase*, public health programmes aiming to prevent overweight among children in which social marketing is applied to enhance the outcomes will be explored.

In *the development phase*, a practical tool or format for monitoring social marketing will be designed. This format will be based on theory, e.g. the social marketing benchmark criteria as defined by French (49) and practice, collected data from several case-studies.

In the testing phase, the developed monitoring tools will be tested while evaluating the application of social marketing in the case-studies using quantitative and qualitative methods.

In the adaptation and finalization phase, the lessons learned and insights gained from the testing phase will be used to make the practical format adaptable for practice, possibly for nationwide implementation in the Netherlands.

Sub-study 3: Strengthening parenting styles and practices in existing interventions

Following the outcomes of the inventory study of CIAO this sub-study aims to strengthen parenting styles and practices in existing interventions to prevent overweight in children. Therefore, a web-based parenting intervention, an E-learning module will be developed and tested for effectiveness. This E-learning could be added to existing interventions to prevent overweight in children and as such be an integral part of the intervention. Furthermore, a pedagogical message for parents will be developed, which can support them in preventing overweight of their child. All local professionals working with children could use this message.

In *the identification phase*, a literature search will be carried out regarding the role of parenting in the prevention of overweight in children and the involvement of parents in existing

interventions. Furthermore, data from the Youth Health Care on the attitudes of professionals and parents regarding overweight in children will be analysed. Subsequently, existing data from a large survey of parents (n=7000) on their perception of overweight and the rules parents set at home regarding healthy eating and physical (in)activity will be analysed (data from a periodical Youth Health Care monitor). More insight into and specific examples of difficult daily life situations in which mothers experience problems in promoting healthy eating and physical activity with their child will be compiled by using focus groups comprised of mothers of different ethnic and socio-economic backgrounds. The Medical Review Ethics Committee Region Arnhem-Nijmegen approved this focus group study, reference number 2012145. This study was not liable for WMO. Written informed consent for participation in the study was obtained from participants.

In *the development phase*, the outcomes of the identification phase will be used for the development of a Dutch web-based parenting intervention. Thereafter, a Delphi method will be conducted in which we use the knowledge of different experts, researchers and professionals working with children for the development of a pedagogical message regarding overweight and obesity.

In *the testing phase*, the effectiveness of the web-based parenting intervention will be investigated in a two-armed cluster randomized controlled trial. This trial is in compliance with the Helsinki Declaration. The Medical Review Ethics Committee Region Arnhem-Nijmegen approved the study protocol, reference number 2012495, NL4280309112. This study was not liable for WMO and registered at the Dutch Trial Register NTR3938. A passive informed consent procedure will be followed in which parents (and their children) can refuse study participation. Thereafter, the usability of the textual content of the pedagogical message will be evaluated by means of focus groups with different ethnic and socio-economic backgrounds.

In *the adaptation and finalization phase*, the web-based parenting intervention and the pedagogical message will be adapted and optimized according to the findings of the testing phase, and the final versions will be disseminated.

Sub-study 4: Implementation of the integrated approach

When preventive programmes are being implemented the iterative and dynamic interactions that occur often diverges from the process as originally planned. The integrated approach faces even more implementation challenges as it is based on a convoluted programme plan and

addresses multiple settings and involves many sectors. During the inventory study, it was concluded that there is limited knowledge of (determinants of) the implementation of the integrated approach. This lack of knowledge makes it difficult to formulate sound implementation strategies and value reported effects of the approach. Therefore, this sub-study will explore the implementation of the integrated approach and its determinants at the community level.

In *the identification phase*, experts and local programme managers of several municipalities initiating the integrated community–wide intervention approach JOGG will be consulted to identify local implementation plans and strategies to formulate a status quo. Furthermore, a systematic review will be conducted to elucidate what is already known about the implementation of the integrated approach and what instruments and outcome measures have been used to evaluate the implementation process of this approach.

In *the development phase*, a process evaluation plan will be constructed and several instruments to evaluate the implementation process of the approach will be created or adjusted. This will be guided by the information obtained during the identification phase and by the framework for determinants of innovations as formulated by Fleuren et al.(59). The process evaluation plan will contain mixed-methods for studying the innovation process (i.e. interviews with intermediaries, observations of activities, document analysis, questionnaires, focus groups, network analysis).

In *the testing phase*, five municipalities in which a longitudinal study will be performed on the implementation process of the integrated approach will be selected. The methods for the process evaluation will be adjusted iteratively when indicated by data-collection and data-analyses.

In *the adaptation and finalization phase*, the results from the longitudinal study will be combined and compared to create an overview of the level and determinants of the implementation of the integrated approach. Interpretation of data will be based on a framework analysis of qualitative data via Atlas Ti, Qualitative Comparative Analysis, a Social Network Analysis and statistical analysis of quantitative data. Moreover, results of different analyses will be compared to triangulate our data. The process of analysis will lead to a guideline for evaluating the innovation process. Additionally, it will provide implementation indicators that could aid municipalities in formulating implementation strategies for the

integrated approach. If needed, the framework of Fleuren et al. (59) will be adjusted to reflect the implementation of the integrated approach.

Sub-study 5: Scientific guidance and evaluation

This study aims to construct an evaluation framework for the integrated community approach of overweight and obesity in children in order to stimulate evaluation of JOGG. This evaluation framework will consist of an evaluation manual set as an action plan in the planning and implementation of evaluation, supporting health promotion specialists to overcome evaluation barriers and in the meantime, build evaluation capacity. The evaluation framework will also consist of an evaluation planning matrix in which practice and evidence based knowledge from the all CIAO sub-studies will be combined. To increase understanding and readability, the methodology for the evaluation manual will be presented first (A), followed by the description of the evaluation planning matrix (B).

(A) Evaluation Manual study

In *the identification phase*, a literature study and interviews with experts, health promotion specialists and JOGG-programme managers will be conducted to determine barriers in programme-evaluation. Subsequently, a comprehensive search in electronic databases to identify a suitable evaluation action plan or manual will be conducted.

In *the development phase*, the identified evaluation framework or manual will be translated into Dutch. Practice based examples from first six JOGG-communities will be added to this evaluation manual (version 1.0). Supportive educational training will be developed following the outline of the evaluation manual. Training will follow essential aspects of the Social Cognitive Theory: modelling, practice, feedback and coaching (60).

In *the testing phase*, the evaluation manual will be delivered to JOGG-programme managers to support evaluation of the local JOGG-approach. Educational training will be provided to the programme managers and involved epidemiologists. Both the training and the evaluation manual will be evaluated through four focus groups consisting of JOGG-programme managers and epidemiologists and experts in integrated community-wide intervention approaches and evaluation from research institutes and semi-governmental national health promoting institutes.

Following the outcomes of the focus groups in *the adaptation and finalization phase* the evaluation manual will be adapted and finalized.

(B) Evaluation Planning Matrix

An evaluation planning matrix is a tool that describes the evaluation questions, the indicators, data-collection instruments and time-line, data-analyses and dissemination per the main goal.

In *the identification phase*, the JOGG-model will be determined. Subsequently, main goals and objectives of the JOGG-approach will be discussed and determined with the JOGG-board, JOGG central coordination office, the six JOGG pilot municipalities and executive researchers of CIAO sub-studies 1,2,3 and 4. Evaluation questions, indicators and data-collection instruments will be delivered by the CIAO sub-studies 1,2,3 and 4.

In collaboration with the other CIAO researchers, in *the development phase*, these elements will be placed in an evaluation planning matrix.

In *the testing phase* the evaluation planning matrix will be submitted to experts, programme managers and the JOGG central coordination office and evaluated on use, usefulness, and feasibility.

In *the adaptation and finalization phase*, the evaluation planning matrix will be adapted in accordance with results from the expert meetings and focus groups and disseminated to the JOGG central coordination office.

Both the evaluation manual and the evaluation planning matrix will be combined to an evaluation framework for the Integrated community-wide Intervention Approach on overweight in children. Expert meetings will be held to create consensus and support for the evaluation framework.

DISCUSSION

It is generally accepted that to combat overweight and obesity, an Integrated Community-wide Intervention Approach is needed. An inventory study showed that some elements of the integrated approach could be more important than others and that in the Netherlands these elements need further definition and operationalization (25). The concerted research consortium CIAO is expected to contribute significantly to the understanding of these key-elements. This comprehensive study is in line with a recommendation from a recent review

study to identify trends and gaps in the field of childhood obesity research done, namely the need for 'more solution-oriented research that combines individual, environmental, and policy strategies to address the problem comprehensively' (61). Collaborating in a research consortium in which researchers gather complementary evidence provides evidence that supports the 'whole' picture rather than parts of it. Also, the diversity of knowledge and skills of the executive researchers and their supervisors working in the ACCs can lead to cross-fertilization that can lead to new insights. In CIAO, this will be stimulated through regular quarterly meetings attended by the executive researchers, their supervisors, the steering committee and also local professionals and stakeholders related to the research topics.

The demonstration of the effectiveness of the integrated approach is beyond the scope and the timeframe of the CIAO collaboration. The effectiveness depends largely on the capacity of local programme management, involved local stakeholders, local resources, the severity/prevalence of overweight and the surrounding social and physical environment of the target population. CIAO will help to develop a better understanding of the integrated approach and offer an evaluation framework, including strategies on effectiveness, which may support local professionals in monitoring their programme, taking the local context in account. An evaluation framework is important because evaluation can improve local programme design which improves the likelihood of achieving successful outcomes(62).

There are multiple challenges in this type of research. CIAO researchers have to take the challenges and solutions of this type of research into account. Nastasi and Hitchcock (2009) conclude in their paper on the challenges of multilevel interventions that "even under relatively controlled experimental or quasi-experimental conditions, many factors can interfere with efforts to carry out well-designed evaluation plans" (63).

The first challenge CIAO faces is that its research depends largely on implementation efforts of the municipalities, the communities. Budget cuts or policy changes are a severe threat to CIAO research, due to a possible halt in local implementation.

The second challenge CIAO faces concerns the necessary processes and productive-interactions between the separate research teams. The integrated output of a consortium thrives on the interactions and knowledge exchange between its partners, but these interactions take time. Incentives are provided for individual research publications, but funding is only provided for five four-year research projects, and the additional requirements to

establish collaboration between several research teams is not accounted for and so far not acknowledged. Simply stated, the 'glue' between the separate research teams might be missing. Thus, for CIAO to harvest the success of the five ACCs collaborating, all stakeholders involved (executive researchers, supervisors, steering committee, supervisory committee, funders) should acknowledge that integrating group processes and competencies are essential.

The third challenge CIAO will face is 'inaction'. CIAO tries to unravel the blueprint for the integrated approach to show presumable effective elements of this approach. An important reason for this is to allow policymakers, researchers and professionals to understand the drivers and solutions of the wicked problem of overweight and obesity. However, the more thorough a description becomes, and the more it shows the complexity of the chain of causality, 'inaction' might be the result as it raises the difficult question of where action should begin within a highly connected complex system (64).

CIAO research is important because it is the first of its sort in the Netherlands to collect solution oriented evidence in the field of overweight prevention. CIAO aims to find out what processes work best at more upstream environmental levels in an integrated community-wide intervention approach to prevent overweight and obesity. This differs from more traditional social and behavioural sciences that try to demonstrate the efficacy of behavioural interventions to modify health outcomes. The output of the CIAO sub-studies (both knowledge and practical tools) will be matched and form building blocks of a blueprint for a local evidence- and practice-based integrated approach towards prevention of overweight in children. Subsequently, the output will support various communities to further optimize the implementation and subsequently the effects of this approach.

REFERENCES

1. World Health Organization. WHO Global Strategy on Diet, Physical Activity and Health: A framework to monitor and evaluate implementation. Geneva, Switzerland: WHO; 2008.
2. Wang Y, Lobstein T. Worldwide trends in childhood overweight and obesity. Int J Pediatr Obes. 2006;1(1):11-25.
3. Flynn MA, McNeil DA, Maloff B, Mutasingwa D, Wu M, Ford C, et al. Reducing obesity and related chronic disease risk in children and youth: a synthesis of evidence with 'best practice' recommendations. Obes Rev. 2006;7 Suppl 1:7-66.
4. Foltz JL, May AL, Belay B, Nihiser AJ, Dooyema CA, Blanck HM. Population-level intervention strategies and examples for obesity prevention in children. Annu Rev Nutr. 2012;32:391-415.
5. Health Council of the Netherlands. Overweight and Obesity. The Hague: : Health Council of the Netherlands; 2003.
6. Kumanyika S, Jeffery RW, Morabia A, Ritenbaugh C, Antipatis VJ. Obesity prevention: the case for action. Int J Obes Relat Metab Disord. 2002;26(3):425-36.
7. Kumanyika SK. Minisymposium on obesity: overview and some strategic considerations. Annu Rev Public Health. 2001;22:293-308.
8. Power C, Lake JK, Cole TJ. Measurement and long-term health risks of child and adolescent fatness. Int J Obes Relat Metab Disord. 1997;21(7):507-26.
9. Swinburn B, Egger G. Preventive strategies against weight gain and obesity. Obes Rev. 2002;3(4):289-301.
10. Thow AME. Population-based Prevention Strategies for Childhood Obesity:report of a WHO Forum and Technical Meeting, Geneva, 15-17 December 2009. In: WHO, editor. Geneva: WHO Press; 2010.
11. Bovill C. Rhetoric or reality? Cross-sector policy implementation at the UK government Department for International Development. Policy and Politics. 2009;2009(37):179-99.
12. ZonMW. Programma Gezonde Slagkracht. Ondersteuningsprogramma voor gemeenten met een integrale aanpak op overgewicht, alcohol, roken en drugs. The Hague: ZonMW; 2009. p. 23.
13. Ministerie van VWS & Ministerie van Jeugd en Gezin. 'Nota overgewicht. Uit balans: de last van overgewicht'. The Hague: Ministerie van Volksgezondheid, Welzijn en Sport; 2009. p. 25.
14. Borys JM, Le Bodo Y, De Henauw S, Moreno LA, Romon M, Seidell JC, et al. Preventing Childhood Obesity, Epode European Network Recommendations. Cachan cedex France: Lavoisier; 2011. 265 p.
15. Van Koperen TM, Jebb SA, Summerbell CD, Visscher TL, Romon M, Borys JM, et al. Characterizing the EPODE logic model: unravelling the past and informing the future. Obes Rev. 2013;14(2):162-70.
16. Romon M, Lommez A, Tafflet M, Basdevant A, Oppert JM, Bresson JL, et al. Downward trends in the prevalence of childhood overweight in the setting of 12-year school- and community-based programmes. Public Health Nutr. 2009;12(10):1735-42.
17. Kremers SPJ, Martens M, Reubsaet A, de Weerdt I, De Vries NK, Jonkers R. Programmeringstudie Overgewicht. Maastricht, The Netherlands: ResCon/Universiteit Maastricht; 2008.
18. Alting D, Bouwens J, Keijsers JFEM. Het evalueren van community interventies : resultaten en conclusies van een reviewstudie naar onderzoeksmethoden en meetinstrumenten. Woerden: Nationaal Instituut voor Gezondheidsbevordering en Ziektepreventie (NIGZ), 2003.

19. Harting J, Van Assema P. Community projecten in Nederland. De eeuwige belofte? 1st ed. Rotterdam: Optima Grafische Communicatie; 2007.

20. Saan H, De Haes W. Gezond effect bevorderen. Het organiseren van effectieve gezondheidsbevordering. Woerden: NIGZ; 2005.

21. Koelen MA, Van den Ban AW. Health Education and Health Promotion. Wageningen (The Netherlands): Wageningen Academic Publishers; 2004.

22. Jansen MW, De Leeuw E, Hoeijmakers M, De Vries NK. Working at the nexus between public health policy, practice and research. Dynamics of knowledge sharing in The Netherlands. Health Res Policy Syst. 2012;10:33.

23. Molleman G, Fransen G. Academic collaborative centres for health promotion in the Netherlands: building bridges between research, policy and practice. Fam Pract. 2012;29 Suppl 1:i157-i62.

24. Wandersman A, Valois R, Ochs L, de la Cruz DS, Adkins E, Goodman RM. Toward a social ecology of community coalitions. Am J Health Promot. 1996;10(4):299-307.

25. Seidell JC, Raat H, Jansen M, Molleman G, Paulussen T, Collard D, et al. Eindrapportage Fase I CIAO – Consortium Integrale Actie tegen Overgewicht. The Hague: ZonMW, 2010.

26. Fransen GA, Koster M, Molleman GR. Towards an integrated community approach of overweight prevention: the experiences of practitioners and policymakers. Fam Pract. 2012;29 Suppl 1:i104-i9.

27. Glass TA, McAtee MJ. Behavioral science at the crossroads in public health: extending horizons, envisioning the future. Social science & medicine (1982). 2006;62(7):1650-71.

28. Bekker M, Wallenburg I, Helderman JK. Verschuivende Verhoudingen: de Marges van Overheidsbeleid bij Overgewicht. In: Dagevos H, Munnichs G, editors. De Obesogene Samenleving: Maatschappelijke Perspectieven op Overgewicht. Amsterdam: Amsterdam University Press; 2007. p. 155-64.

29. Steenbakkers M. Lokaal integraal gezondheidsbeleid: realistische uitdaging of utopie? Een onderzoek binnen gemeenten naar mogelijkheden tot intersectorale samenwerking. [Local integrated health policy: realistic challenge or utopian dream? a study of opportunities for intersectoral collaboration in local government]. . Maastricht: Maastricht University; 2012.

30. Steenbakkers M, Jansen M, Maarse H, de Vries N. Challenging Health in All Policies, an action research study in Dutch municipalities. Health policy (Amsterdam, Netherlands). 2012;105(2-3):288-95.

31. RIVM. Volksgezondheid Toekomst Verkenning, Nationaal Kompas Volksgezondheid Bilthoven: RIVM; 2014 [updated 23 juni 2014; cited 2014 2 January]. versie 4.17:[Available from: http://www.nationaalkompas.nl/gezondheidsdeterminanten/persoonsgebonden/overgewicht/.

32. Blokstra A, Vissink P, Venmans L, Holleman P, Schouw YTvd, Smit HA. Nederland de Maat Genomen, 2009-2010. Monitoring van risicofactoren in de algemene bevolking. . Bilthoven: RIVM; 2011.

33. National Obesity Observatory. Factsheet Child Obesity and Socioeconomic Status: National Obesity Observatory; 2012 [cited 2012 12 December]. Available from: http://www.noo.org.uk/uploads/doc/vid_16967_ChildSocioeconSep2012.pdf.

34. Gerards S, Sleddens E, Dagnelie P, de Vries N, Kremers S. Interventions addressing general parenting to prevent or treat childhood obesity. Int J Pediatr Obes. 2011(6(2-2)):28-45.

35. Schrijvers C, Schuit AJ. Substance use and sexual behavior of adolescents with a low educational level. Clues for prevention. . 2010.

36. Snoek H, Larsen J, Janssens J, Fransen G, van Wijk E, Engels R, et al. Parental involvement in interventions on childhood obesity (report CIAO phase 1). Wageningen/Nijmegen: Consortium Integrated Approach Overweight, 2010.

37. Makkes S, Halberstadt J, Renders CM, Bosmans JE, van der Baan-Slootweg OH, Seidell JC. Cost-effectiveness of intensive inpatient treatments for severely obese children and adolescents in the Netherlands; a randomized controlled trial (HELIOS). BMC public health. 2011;11(1):518.

38. Michie S, Van Stralen M, West R. The behaviour change wheel: a new method for characterising and designing behaviour change interventions. Implement Science. 2011;14(42).

39. Bleich SN, Segal J, Wu Y, Wilson R, Wang Y. Systematic review of community-based childhood obesity prevention studies. Pediatrics. 2013;132(1):e201-10.

40. Barlow SE. Expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: summary report. Pediatrics. 2007;120 Suppl 4:S164-92.

41. Centre for Public Health Excellence, National Collaborating Centre for Primary Care. Guidance on Obesity: The Prevention, Identification, Assessment and Management of Overweight and Obesity in Adults and Children. London, UK: National Institute for Health and Clinical Excellence, 2006.

42. Birch LL, Ventura AK. Preventing childhood obesity: what works? Int J Obes (Lond). 2009;33 Suppl 1:S74-81.

43. Kremers S, de Bruijn G-J, Visscher T, van Mechelen W, de Vries N, Brug J. Environmental influences on energy balance-related behaviors: A dual-process view. International Journal of Behavioral Nutrition and Physical Activity. 2006;3(1):9.

44. Robertson W, Friede T, Blissett J, Rudolf MC, Wallis M, Stewart-Brown S. Pilot of "Families for Health": community-based family intervention for obesity. Arch Dis Child. 2008;93(11):921-6.

45. Roseman MG, Riddell MC, Haynes JN. A content analysis of kindergarten-12th grade school-based nutrition interventions: taking advantage of past learning. J Nutr Educ Behav. 2011;43(1):2-18.

46. Swinburn B, Egger G, Raza F. Dissecting Obesogenic Environments: The Development and Application of a Framework for Identifying and Prioritizing Environmental Interventions for Obesity. Preventive Medicine. 1999;29(6):563-70.

47. Warren JM, Henry CJ, Lightowler HJ, Bradshaw SM, Perwaiz S. Evaluation of a pilot school programme aimed at the prevention of obesity in children. Health Promot Int. 2003;18(4):287-96.

48. Economos CD, Irish-Hauser S. Community interventions: a brief overview and their application to the obesity epidemic. J Law Med Ethics. 2007;35(1):131-7.

49. French JB-S, McVey D, Merritt R. Social Marketing and Public Health - Theory and Practice. Oxford: Oxford University Press; 2010.

50. Evans W. How social marketing works in health care. BMJ. 2006;332(7551):1207-10.

51. Evans WD, Christoffel KK, Necheles JW, Becker AB. Social marketing as a childhood obesity prevention strategy. Obesity (Silver Spring). 2010;18 Suppl 1:S23-6.

52. Gracia-Marco L, Vicente-Rodriguez G, Borys JM, Le Bodo Y, Pettigrew S, Moreno LA. Contribution of social marketing strategies to community-based obesity prevention programmes in children. Int J Obes (Lond). 2011;35(4):472-9.

53. Rayner M. Social marketing: how might this contribute to tackling obesity? Obes Rev. 2007;8 Suppl 1:195-9.

54. HM Government. Change 4 Life - One Year On. HM Government; 2010.

55. Evans WD, Necheles J, Longjohn M, Christoffel KK. The 5-4-3-2-1 go! Intervention: social marketing strategies for nutrition. J Nutr Educ Behav. 2007;39(2 Suppl):S55-9.

56. Huhman ME, Potter LD, Nolin MJ, Piesse A, Judkins DR, Banspach SW, et al. The Influence of the VERB campaign on children's physical activity in 2002 to 2006. Am J Public Health. 2010;100(4):638-45.

57. Mathews LB, Moodie MM, Simmons AM, Swinburn BA. The process evaluation of It's Your Move!, an Australian adolescent community-based obesity prevention project. BMC public health. 2010;10:448.

58. Wong FL, Greenwell M, Gates S, Berkowitz JM. It's what you do! Reflections on the VERB campaign. Am J Prev Med. 2008;34(6 Suppl):S175-82.

59. Fleuren M, Wiefferink K, Paulussen T. Determinants of innovation within health care organizations. International Journal for Quality in Health Care. 2004;16(2):107-23.

60. Bandura A. Social Foundations of thought and action: a social cognitive theory. Englewood Cliffs: Prentice-Hall; 1986.

61. Frerichs L, Perin DP, Huang TK. Current Trends in Childhood Obesity Research. Current Nutrition Reports. 2012;1(4):228-38.

62. Nutbeam D, Bauman A. Evaluation in a Nutshell: A Practical Guide to the Evaluation of Health Promotion Programs. Australia2006.

63. Nastasi BK, Hitchcock J. Challenges of evaluating multilevel interventions. American journal of community psychology. 2009;43(3-4):360-76.

64. Shiell A. The danger in conservative framing of a complex, systems-level issue. Healthc Pap. 2008;9(1):42-5; discussion 62-7

Chapter 4

Finding a suitable evaluation framework for Integrated Community-wide Intervention Approaches: easier said than done

Marije van Koperen
Carry Renders
Jantine Schuit
Jaap Seidell

Submitted

ABSTRACT

Background

Integrated community-wide intervention approaches (ICIAs) are often advocated as an important overweight-prevention strategy. Unfortunately, ICIAs are not often thoroughly evaluated, making it hard to understand their functioning. An evaluation framework can support programme evaluation. However, choosing an evaluation framework for ICIAs proves to be difficult since it is not known which framework best suits ICIA evaluation. We therefore systematically appraised evaluation frameworks based on their usefulness for ICIA evaluation, in particular for ICIAs to tackle overweight.

Method

A four-phase appraisal process was applied to identify evaluation frameworks. First we searched in the literature for evaluation frameworks that clearly described how the evaluation process could be guided. Second, we screened all articles based on title and abstract. We only selected frameworks that had: a thorough description of programme evaluation steps, were science based, applicable to various health behaviors, and had a full text version available. Subsequently included frameworks were independently appraised by two researchers. Appraisal was based on requirements derived from the literature on ICIA evaluation barriers and facilitators.

Results

The first phase generated 25 evaluation frameworks. Of these, only six met the inclusion criteria and none met all requirements for ICIA evaluation. Most frameworks did not address resource allocation, evaluation culture, and organizational change. The Community Toolbox met most requirements.

Conclusion

Evaluating ICIAs proves to be difficult due to a wide range of barriers. Although a plethora of evaluation frameworks can assist in evaluating ICIAs (including ICIAs to tackle overweight), it is difficult to choose one that addresses barriers specific to ICIAs. The development and use of a systematic appraisal methodology helped us to find the most appropriate evaluation

framework. Future studies should focus on pilot-testing evaluation frameworks for ICIAs based on capacity-building, compatibility, usability and feasibility within daily practice.

INTRODUCTION

Worldwide, overweight and obesity have become a major public health concern (1, 2). To prevent overweight, experts often advocate implementing interventions that are 'community-wide' and 'integrated'. So-called 'integrated community-wide intervention approaches' (ICIAs) require that interventions exist of multiple components and are directed at *both* personal factors (e.g., knowledge about healthy food) and the environment (e.g., increasing the availability of healthy food) (3-10).

Although ICIAs are often advocated, the evidence base for such approaches is still scarce; only limited effects in changing population risk behaviors or health outcomes are found (5, 8, 9, 11-13). The limited evidence seems related to the fact that ICIAs are often not thoroughly evaluated because: there is limited funding for the evaluation (14-16); time-constraints (14-17); funding agency's expectations and the focus of evaluation (15, 16); insufficient competences and qualified personnel to perform the evaluation and publish the results (14, 15, 17); and the lack of a positive evaluation culture (e.g., training issues, staff perceptions on evaluation, a stimulating environment for evaluation) (18). So even though most professionals are acquainted with traditional evaluation (e.g., such as randomized control trials or community intervention trials) choosing the evaluation design and methodology for comprehensive ICIAs remains challenging.

Within ICIAs, such a traditional evaluation is not appropriate or feasible since: effects at health outcome level occur often only in the long term and are more difficult to measure (19); unintended environmental or contextual factors alter or intervene the intended programme and compromise expected effects (e.g., economic or political context can strengthen or nullify certain relationships or associations) (20), moreover these changing circumstances require more difficult dynamic evaluation tactics (21); programme scope and budget for evaluation of ICIA is limited, an extended measurement of health outcomes and monitoring of mediating factors and context of ICIAs is therefor often omitted; evaluation requires a focus on processes; randomization of the target group within the community is difficult; the 'message' is often contaminated causing distortion of outcomes; lack of or low statistical power due to a small number of communities in the sample (19, 21, 22). Since traditional evaluation methods are often still applied to evaluate ICIAs, ICIAs often end-up showing no effect.

To strengthen the evidence-base for ICIAs, there is thus a clear need for ways to support ICIA evaluation. Evaluation frameworks are such a support tool. They can show programme lay-out, indicate output and outcomes for success measurement, support target populations (e.g., communities) and intermediate target groups (e.g., the national coordination office) in a better understanding of the programme and in depicting indicators and milestones for measurement (17). For ICIA evaluation, such frameworks should enable a focus on processes, impact and outcomes of the programme, guide the programme evaluation, and be able to add to context description. An attempt to develop an evaluation framework has been made by the French programme 'Ensemble Prévenons lÓbesité Des Enfants (EPODE, or Together Let's Prevent Childhood Obesity) (23). EPODE referred to the evaluation framework as the programme 'logic model' (17). EPODE is an ICIA that is implemented worldwide, including the Netherlands where it is called 'JOGG' (Jongeren op Gezond Gewicht or Youth on a Healthy Weight).

Although EPODE's logic model was more comprehensive than other evaluation frameworks, this logic model proved to be insufficient to support evaluation of local JOGG-approaches. As such, local programme management (responsible for evaluation of their JOGG-approaches) expressed the need for a better evaluation framework to guide ICIA evaluation; a useful and practical guide for stimulating planning, implementation and execution of programme evaluation of this integrated community-wide intervention approach. Unfortunately – even though a plethora of evaluation frameworks exists - a systematic appraisal of existing frameworks based on their usefulness for ICIAs was not yet done (2, 24-27). Based on this gap in knowledge, our goal is to conduct a systematic identification and appraisal of evaluation frameworks that can facilitate future planning, design and implementation of the programme evaluation of ICIAs and select the evaluation framework that includes most practical guidelines supportive of the process of evaluating ICIAs.

METHOD

To identify an evaluation framework suitable for ICIA programme evaluation we adopted a fourth-phase approach as depicted in Figure 1. In *the first phase* our aim was to generate a list of publications in which evaluation frameworks were described. We only selected frameworks that clearly described how the evaluation process could be guided and from which full texts were available.

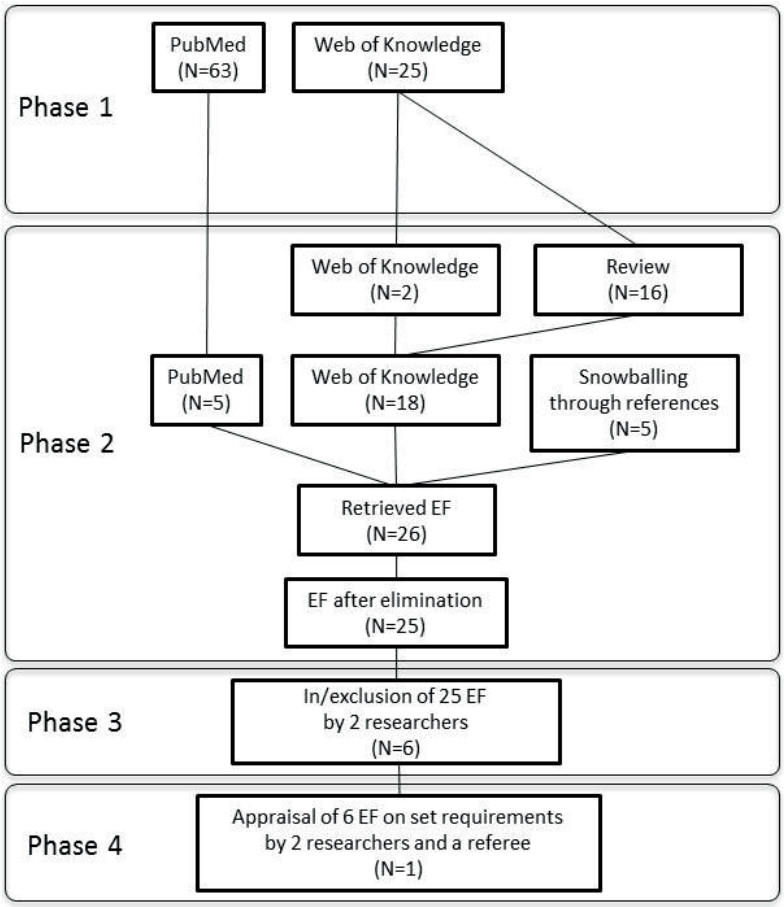


Figure 1: Flowchart of the research phases

MVK searched in the databases PUBMED and the ISI Web of Knowledge for articles published between 1 January 1999 and 1 January 2012. In PUBMED we searched using the keywords: 'evaluation framework' OR 'evaluation frameworks' AND 'health promotion'. In ISI Web of Knowledge the search was carried out by using the keywords 'evaluation framework' in title and 'health promotion' in topic. Additionally, the search was refined with the following key words: human subjects, case reports, editorial, evaluation studies, guideline, journal article, practice guideline, review, systematic reviews, in English. During writing of the results and submitting the paper an additional search was performed to articles published between 1 January 2012 and 1 January 2014.

In *the second phase*, all articles were screened based on title and abstract. We only included articles that: had a description of the programme evaluation steps; made use of scientific literature or experts in its development; and could be applied to various health behaviors. Subsequently, snowballing was used to pursue references in the retrieved evaluation frameworks to collect more frameworks. This resulted in the selection of all evaluation frameworks labelled ' programme/intervention evaluation framework' from Davies et al. (28). Since these searches frequently yielded the same articles, de-duplication was applied. For the remaining articles, only those with full texts available were included.

In *the third phase*, full texts of included articles were obtained and these were independently appraised by two researchers (MVK; FW) based on the three main operationalized criteria. The evaluation framework needed to: provide a thorough description of all programme evaluation steps; be based on scientific literature; and be applicable to various health behaviors. The first criterion was appraised on: (a) the availability of a thorough description and guidelines of programme evaluation (orientation, planning, organization/design, data-collection, data-analyses, dissemination), and, (b) the presence of guidelines for professionals to overcome barriers in programme evaluation. The second criterion was appraised on: (a) the presence of or references to scientific (evaluation) literature, and, (b) peer-reviewed papers or the use of expert counsel groups. The third criterion was appraised negative when: (a) the evaluation framework could only be used for the evaluation of a specific health behavior; or (b) was related to specified environments and health outcomes and could not be transferred to other health behaviors. MVK and FW independently scored evaluation frameworks and summarized the outcomes into an electronic qualitative matrix. A '+' was scored when the framework met the elaborated criteria; a '+/-' when it was not clear whether the evaluation framework met the criteria or only met the criteria partially; and a minus '-' when the evaluation framework did not meet the criteria. When disagreements were found in the scoring of the frameworks, MVK and FW discussed it and tried to reach consensus on the score. Only evaluation frameworks that scored a '+' were included for the fourth phase.

In *the fourth phase*, remaining evaluation frameworks were again appraised using more specific requirements. These requirement were chosen based on literature on: evaluation theories; evaluation barriers and solutions for evaluation of complex programmes; evaluation in complex organizational systems; and the evaluation of health promotion programmes in general.

Table 1: Requirements to be appraised

	Requirements	The EF should…
1	Advice or information on resource generation and allocation: budget, time, competences, evaluation culture	• guide resource generation and allocation • inform on how to frame time • inform on necessary competences for conducting an evaluation • advice on evaluation culture (training possibilities, staff perceptions on evaluation, a stimulating environment for evaluation)
2	Advice or information on capacity building of evaluation knowledge	• be building evaluation capacity • facilitate learning and change at the individual level and at the organizational level • offer practical tools and facilitating instruments • guide on stakeholder involvement at all stages of the programme evaluation process to improve the quality of the evaluation and its credibility among stakeholders
3	Advice or information on use of programme theory or logic model	• advise the use of a logic model or programme theory to focus and plan an ICIA, and accordingly the evaluation
4	Advice or information on evaluation methodology and design issues	• be able to guide the evaluation process of a non-defined ICIA • advise on when to consult experts to enhance the quality of the evaluation • stimulate the assessment of the community on the basis of social, physical, economic and political determinants
5	Advice or information on the importance of altering evaluation tactics following emergent conditions	• stimulate the use of mixed methods to evaluate effectiveness and efficiency, since qualitative methods are more flexible than quantitative and responsive to changing local needs and conditions
6	Advice or information on dissemination of results	• stress the importance of dissemination of results to all stakeholders • provide guidance on methods of dissemination

Through discussion of this literature, the authors collaboratively decided six major requirements needed to be appraised (Table 1): (1) Advice or information on resource

generation and allocation: budget, time, competences, evaluation culture; (2) Advice or information on capacity building of evaluation knowledge; (3) Advice or information on use of programme theory or logic model; (4) Advice or information on evaluation methodology and design issues; (5) Advice or information on the importance of altering evaluation tactics following emergent conditions; (6) Advice or information on dissemination of results. MVK and MB again used these requirements to independently appraise the evaluation frameworks. MVK and MB appraised the evaluation frameworks in a matrix again, using '+' when the evaluation framework met the specific requirement; '+/-' when it was not clear whether the evaluation framework met the requirement or only met the requirement partially; and '-' when the evaluation framework did not meet the requirement. If the two researchers disagreed during the appraisal an additional researcher was involved as referee for disputed items (CR).

RESULTS

Outcomes of the identification process

The review process generated 63 articles in Pubmed that described evaluation frameworks that were published between 1 January 1999 and 1 January 2012. Between 1 January 2012 and 1 January 2014 an additional 40 articles were found; 36 in Pub-med and four in Web of Science (not included in figure 1, the research flowchart). Based on title and abstract none of the articles from the search between January 2012 and January 2014 could be included. Five evaluation frameworks of the 63 Pubmed articles only five met the three inclusion criteria. The evaluation frameworks originated from Canada, the United States of America, The Netherlands, United Kingdom and Australia. Web of Science deliverd 25 evaluation frameworks. In the second phase snowballing and the review from the Davies et al, yielded an additional 21 evaluation frameworks. After de-duplication and exclusion from one evaluation framework since no full-text could be retrieved, 25 evaluation frameworks were included (Table 2). Of these, 19 were excluded in the third phase for not meeting all requirements with an inter-rater reliability of 85% (see Supporting Information S1 and S2). The remaining six evaluation frameworks were the: Community Toolbox (29), CBPH Framework (30), WHO framework (31), PETK (32), CDC's Framework (33), and the Victorian Framework (34) (Table 3). These frameworks were again appraised in the fourth phase by the more refined requirements (Table 4), the inter-rater reliability was 93%; the outcome of this appraisal will be described below.

Table 2: Overview of 25 included Evaluation Frameworks (phase 2)

	Name of the Evaluation Framework
1	CDC's framework for programme evaluation in Public Health (35)
2	EPIC Model (EPIC=Evaluation Planning Incorporating Context) (36)
3	Evaluating the Initiative - Community Toolbox (29)
4	Framework for Health Promotion evaluation (31))
5	Evaluation framework from the National Obesity Observatory for weight management interventions (37)
6	Evaluation Design Checklist (38)
7	An Evaluation framework for Community Health Programmes (30)
8	RE-AIM Framework (39)
9	The development of an evaluation framework for injury surveillance systems (40)
10	ECIP: framework for assessing the Effectiveness of Community Intervention Project (41)
11	Preffi 2.0 (58)
12	Development and testing of a framework for assessing the effectiveness of health promotion (42)
13	Overcoming health inequalities: a participative evaluation framework fit for the task (43)
14	Healthy weight, healthy lives: A toolkit for developing local strategies (44)
15	Programme Evaluation Tool Kit (45)
16	Strategy for tackling health inequalities: Draft Performance Management Framework (46)
17	Experience with a structure, process and outcome framework for evaluating an information system (47)
18	An Evaluation Framework for Health Promotion: Theory, Quality and Effectiveness (48)
19	Evaluation Framework for Health Promotion & Disease Prevention Programmes (34)Victorian Government Department of Health, 2010)
20	A Process-Evaluation Plan for Assessing Health Promotion Programme Implementation: A How-To Guide (49)
21	WHO Global strategy on Diet, Physical Activity and Health: A Framework to Monitor and Evaluate Implementation (50)
22	Framework for design and evaluation of complex interventions to improve health (51)
23	CIPP Evaluation Model checklist 2nd edition (52)
24	Evaluation Model for the California Healthy Cities Project (53)
25	A Framework for Evaluating Health Promotion Programmes (54)

Table 3: Overview of the six evaluation frameworks to be appraised (phase 3)

Name	Description
CDC's framework for programme evaluation in Public Health (Centers for Disease Control and Prevention, 1999) *(abbreviated as CDC's Framework)*	This evaluation framework by the Centers for Disease Control (US) is a six-step practical, non-prescriptive tool, designed to summarize and organize essential elements of programme evaluation. The framework comprises steps in programme evaluation practice and standards for effective programme evaluation. It encourages integration of evaluation with implementation steps. The emphasis is on practical, ongoing evaluation strategies that involve all programme stakeholders, not just evaluation experts.
Evaluating the Initiative - Community Toolbox (Workgroup for Community Health and Development, 2011) *(abbreviated as Community Toolbox)*	This evaluation framework, initially developed by the Kansas University (US), is part of a comprehensive multi-layer website filled with a lot of information on community-based public health programmes. The six steps used in the evaluation toolbox are based upon CDC's framework. This comprehensive toolbox guides the user though the website, interrelating evaluation steps with implementation steps and the practical guidelines there available. The toolbox is filled with examples, checklists and supporting PowerPoints, tools and literature referrals.
Framework for Health Promotion evaluation (Rootman et al., 2001) (*abbreviated as WHO framework)*	An eight-step evaluation framework created by the WHO European Working Group on Health Promotion Evaluation. This framework proposes the evaluation of health promotion initiatives by six key-principle and includes a strong focus on stakeholder participation.
An Evaluation Framework for Community Health Programmes (The Center for the Advancement of Community Based Public Health, 2000) *(abbreviated as CBPH)*	This is an evaluation framework intended for use by community-based organizations & community health workers. The six steps used are based upon CDC's framework. This framework provides a conceptual roadmap to guide & inform the programme evaluation process.
Programme Evaluation Tool Kit (Public Health Agency of Canada, 1997) *(abbreviated as PETK)*	This Canadian toolkit is a practical five-step guide to planning, conducting and using programme evaluation intended for Public Health management. It is underpinned by a set of guiding principles and includes multiple (example) worksheets, checklists and references.

Evaluation framework for Health Promotion & Disease Prevention Programmes (Victorian Government Department of Health, 2010) (*abbreviated as Victorian Framework)*	This Australian (Victorian Government) Evaluation Framework uses a six-step approach for planning & implementing an effective approach to the evaluation of health promotion programmes. It is a concise manual which refers to other resources created within the Victorian Government supportive to evaluation and implementation of community programmes.

Requirement 1: Advice on resource generation and allocation

None of the six evaluation frameworks scored positive for all items; i.e., budget, time, competences, and evaluation culture. None of the evaluation frameworks refer to evaluation culture, but the frameworks from the Community Toolbox (29), CBPH (30), and WHO (31) address evaluation budget and the Community Toolbox (29), the CBPH Framework (30) and the PETK (32) address evaluation time and competences.

The Community Toolbox (29) includes an extensive plan for the assessment of local resources and describes how evaluation can be aligned with the available budget. Guidelines from the toolbox advice to reserve 10-15% of the programme budget for evaluation and assess community assets when financial resources are not available from government. The CBPH framework (30) advises that costs should be mapped for the necessary technical resources in the design of the evaluation, but does not describe how to generate budget. Within the WHO framework (31) evaluation costs are described. To allocate evaluation budget, the WHO framework (31) recommends applying a systematic evaluation approach and considering the initiative, the evaluability of the initiative, evaluation methods of similar programmes, and the availability of technical expertise.

The Community Toolbox (29), the CBPH Framework (30) and the PETK (32) address evaluation time by describing competences, alignment of evaluation with implementation, and offering support tools. Both the Community Toolbox (29) and PETK (32) mention competences as a way to save time and state that evaluation of communities should be coupled with technical assistance or a research specialist. Although it is not framed as a time saving measurement, the Community Toolbox (29) promotes a utility focused evaluation and stimulates the involvement of all kind of stakeholders. The CBPH framework (30) and PETK (32) state time can be saved by alignment of evaluation with programme implementation.

The CBPH framework (30) therefore recommends integrating the evaluation plan within the overall programme plan. The PETK (32) also defines throughout the roles and tasks of stakeholders, among others the programme manager, the epidemiologists, programme staff (e.g. the programme manager should know of resources available, should consult the epidemiologists and should encourage other stakeholders to become involved in the evaluation) moreover, the PETK states that time has to be considered when choosing evaluation design and planning of the data-collection. Here fore, the PETK (32) offers a logistics worksheet to assess evaluation time, human resources and expenses, describe multiple time-saving steps, and recommends answering only high-priority evaluation questions. The CDC Framework (33) recommends to assemble an evaluation team and describes the capabilities of the team members (e.g. decision makers can help focus the evaluation design on asking questions, scientists can bring expertise to the development of evaluation questions and design). The Victorian Framework (34) does not describe competences but recommends to seek help from professionals experienced in science and evaluation.

Requirement 2: capacity building of evaluation knowledge

None of the frameworks referred to organizational change. The Victorian Framework (34) and the WHO Framework (31) do not describe capacity building activities nor are specific on what knowledge and skills stakeholders should obtain during programme evaluation. However, the Community Toolbox (29), CBPH framework (30), PETK (32) and the CDC's Framework (33) recommend stakeholder participation in all evaluation steps (i.e., involvement of programme staff, community members and evaluation experts in the evaluation process). Although the WHO framework (31) also mentions that stakeholders should be involved throughout the evaluation process, they do not describe how to do so (e.g., how to identify the purpose of the evaluation in a consensual process). The Community Toolbox (29) and the CBPH (30) describe which capacities individuals involved in programme evaluation gain (i.e., individual change in knowledge on evaluation planning and design). The CBPH (30) for example provides the reader with multiple example cases and recommends to directly apply obtained evaluation knowledge and note key ideas.

Requirement 3: use of programme theory or logic model

The Community Toolbox (29), CBPH framework (30), PETK (32) and the Victorian Framework (34) stimulate the use of a logic model and provide tools and guidelines on how to develop such a model. The WHO Framework (31) does not specify what a logic model looks like or how it should be developed, but describes that logic models are helpful for describing the community intervention approach and that all stakeholders need to be involved for its development. The CDC's Framework (33) mentions the use and importance of a programme theory or logic model, but does not explicitly support its development or provide clear guidelines on how to develop a logic model.

Requirement 4: advice on evaluation methodology and design issues

Both the Community Toolbox (29) and CDC's Framework (33) describe the availability of advice or directions on expert consultation for data collection and the conduct of a community analysis. The WHO framework (31) hardly advices on evaluation methodology and design issues. The PETK (32) shows a strong focus on design and the development of data collection tools, quality assessment of the developed tools, and the analysis of data. CDC's framework (33) mentions that since effects unfold over time, a programmes mission, goals and objectives all represent varying levels of specificity regarding programme expectations. CDC's Framework provides examples of related determinants and indicators, e.g. of programme activities (programme capacity, participation rate, resource use, intervention exposure) and of programme effects (behavior, health status, participant behavior, community norms, policies or practices). It provides the reader with a reason why consultation of evaluation experts is important. The CBPH (30) mentions the importance of involvement of skilled experts and technical books in the introduction but fails to be specific as to where, when and how experts are needed. This framework does emphasize the use of multiple and diverse data collection methods so as to make the data as complete as possible. Advice on the conduct of a community analysis is mentioned but very limited. The Victorian Framework (34) does not recommend performing a community analysis as part of the evaluation, nor the use of multiple and diverse data collection instruments (e.g., triangulation). In the beginning of the framework an advisory role for an experienced evaluator is recommended.

Requirement 5: Altering evaluation tactics following emergent conditions

The WHO framework (31) is introduced as following the key-ideas of Springett (55) including that this evaluation framework should be 'flexible in its application and responsive to emerging conditions'. Unfortunately, it does not expand upon evaluation flexibility and lacks practical advice on how this flexibility can be achieved. The Community Toolbox (29), the CBPH (30) and the Victorian Framework (34) scored '+/-' on this requirement. The reason for this is the advocacy of qualitative data-collection methods which are more flexible than quantitative methods and can be easily adapted. Meanwhile, CDC's Framework (33) does make recommendations on how to adapt the evaluation to changing conditions and, when needed, to change (parts of) the evaluation design. Recommendations are for instance to use more than one source to gather evidence for indicators and to use mixed methods in order to achieve a balanced evidence base. Another option suggested is to modify indicators or adopt new ones during the evaluation (33). The PETK (32) does not mention 'altering evaluation tactics' at all.

Requirement 6: dissemination of results

All evaluation frameworks elaborated on the dissemination of results, but only the Community Toolbox (29) and CDC's Framework (33) were appraised positive. Both CDC's Framework (33) and the Community Toolbox (29) promote discussion of the results with intended users and relevant stakeholders before results are more widely disseminated. Moreover this evaluation framework has extensive guidelines on how to communicate evaluation outcomes with community members. The PETK (32) also promotes dissemination of results, although its focus is on a formal report for which a structure is provided. The CBPH (30) recommends dissemination of results to ensure the best use of results and share the lessons learned. The WHO framework (31) does not provide any tools or guidelines to enhance dissemination of the evaluation results but merely states that to do so is important. The Victorian Framework (34) does give examples of possible dissemination strategies such as training, funding incentives, scientific papers or face-to-face, but the creation of a written report (for which formatting guidelines are provided) is also promoted.

Table 4: The completed qualitative matrix of the appraisal with the six requirements (phase 4)

Advice /directions on / Name of evaluation framework		1.Resource allocation				2. Capacity building of evaluation knowledge								3. Use of programme theory/ logic model	4. Advice on evaluation methodology and design issues			5. Altering evaluation tactics (in the light of emergent conditions)	6. Dissemination of Results
						A. Stimulate stakeholder participation						B. Individual Change	C. Organizational Change						
		A. Budget	B. Time	C. Competences	D. Evaluation culture	Overall	I. Planning	II. Formulation of programme logic	III. Data-collection	IV. Data-analysis	V. Dissemination				A. Expert consultation	B. Data Collection	C. Community analysis		
1	CDC's Framework	-	-	+/-	-	+	+/-	+	+	+	+	+/-	-	+/-	+	+	+	+	+
3	Community Toolbox	+	+	-	+/-	+	+	+	+	+/-	+/-	+	+/-	+	+	+	+	+/-	+
4	WHO framework	-	-	-	-	-	-	+	+/-	+/-	+/-	+/-	-	-	+/-	-	-	-	+/-
7	CBPH	-	+/-	-	-	+	+/-	+	+/-	+	+	+	+/-	+	+/-	+	+/-	+/-	+/-
15	PETK	-	+/-	+	-	+	+/-	+/-	+	+	+	+/-	-	+	+	+	-	-	+/-
19	Victorian Framework	-	-	-	+/-	-	+/-	+/-	-	-	+/-	-	-	+	+	-	-	+/-	+

DISCUSSION

Integrated community-wide intervention approaches (ICIAs) are seen as the most optimal approach to prevent overweight, but often not thoroughly evaluated. Using an evaluation framework appropriate for ICIA evaluation can assist in evaluating such comprehensive programmes. However, few studies comprehensively and systematically reviewed the usefulness of evaluation frameworks for ICIA evaluation. We therefore systematically appraised evaluation frameworks for ICIA evaluation.

The main outcomes of our appraisal show that among the 25 evaluation frameworks which we identified, only six met the inclusion criteria and none met all literature-based requirements for ICIA evaluation. Moreover, most frameworks did not address the most prominent evaluation barriers such as resource allocation, evaluation culture, and organizational change. This is remarkable since, for example, changes in organizational policy may assist in the embedment of evaluation within the organization and is therefore essential for the organization's ability to build evaluation capacity (18, 56, 57). These findings imply that all of the evaluation frameworks should first be adapted in order to be useful for ICIA evaluation. This was also found by Davies and Sheriff(28).

Although none of the frameworks were fitting ICIA evaluation perfectly, the Community Toolbox(29) seemed to be the most optimal framework for our purpose. The Community Toolbox of Kansas University is a comprehensive website which describes a stepwise approach of evaluation implementation and can be used as a reference tool; it presents guidelines for professionals to overcome barriers in programme evaluation, can be used for all sorts of public health problems and is a capacity building tool for evaluation. However, the Community Toolbox also scarcely addresses the competences of the programme coordinator and evaluators, nor raises awareness on the importance of 'evaluation culture' or stimulate the use of qualitative data collection methods (besides quantitative) in order to achieve a greater flexibility of the evaluation.

Strengths and limitations

The main strength of our study is the development of a new systematic appraisal methodology. This methodology proved to show how identified problems – based on a literature review - can be transferred into search criteria to retrieve a perfect-fit solution. Each requirement was

extensively operationalized and could therefore also function as a benchmark and stimulate best practice learnings. Moreover, the matrices with appraisal criteria can easily be adjusted to other studies. Although none of the identified evaluation frameworks scored positive on all requirements, used approach enabled us to identify the missing requirements in all the evaluation frameworks and use this information to fill in the blanks with the evaluation framework that scored better on a specific requirement. Another strength is that this study looked beyond the knowledge within the obesity and overweight prevention community - although the question for a suitable framework arose from an overweight prevention programme - and can therefore be generalized to other health problems (e.g., depression, smoking).

A limitation of our study is that it became clear from the beginning that it was not possible to conduct a systematic review of published literature, because of the heterogeneous character of evaluation frameworks in general and the way these are disseminated or published. Most evaluation frameworks are not published in PubMed or ISI Web of Knowledge and scarcely published in scientific journals, these are foremost available on websites of public health institutes. Although our search was extensive it was difficult to retrieve all relevant material and we might have missed some evaluation frameworks that could have fulfilled the inclusion criteria. For instance for this study we used CDCs original 1999 MMWR article regarding the Framework for Programme Evaluation in Public Health (35). At the time of this study, this framework evolved into a self-study guide with extra information and checklists in PDF's on the CDC website. Moreover, It is important to note that the scope of the paper is limited to public health frameworks. Frameworks from other fields such as business, education and social sciences are not incorporated. Another limitation of this work is that only evaluation frameworks available in English were included. Therefore our conclusion should be drawn with some caution.

CONCLUSION

There is an increasing need for guidance to evaluate ICIAs as more and more are being implemented. In practice, evaluating ICIAs proves to be difficult due to a wide range of barriers. Although a plethora of evaluation frameworks can assist in evaluating ICIAs, few address barriers specific to ICIA evaluation. By our systematic appraisal we took a first step in identifying

such a framework. Moreover, we described a practical approach for selecting an evaluation framework. We hope this will help practitioners in choosing an evaluation framework and also stimulate other researchers to apply our systematic appraisal approach. In this way, programme managers, policymakers, professionals and evaluators can optimize ICIA evaluation. Future studies should focus on pilot-testing these ICIA evaluation frameworks based on capacity-building, compatibility, usability and feasibility within daily practice. Currently, this second step is taken with the Kansas University Community Toolbox within the JOGG-approach in the Netherlands.

REFERENCES

1. de Onis M, Blössner M, Borghi E. Global prevalence and trends of overweight and obesity among preschool children. The American Journal of Clinical Nutrition. 2010;92(5):1257-64.
2. Lobstein T, Baur L, Uauy R. Obesity in children and young people: a crisis in public health. Obesity Reviews. 2004;5:4-85.
3. Power C, Lake JK, Cole TJ. Measurement and long-term health risks of child and adolescent fatness. Int J Obes Relat Metab Disord. 1997;21(7):507-26.
4. Swinburn B, Egger G. Preventive strategies against weight gain and obesity. Obes Rev. 2002;3(4):289-301.
5. Flynn MA, McNeil DA, Maloff B, Mutasingwa D, Wu M, Ford C, et al. Reducing obesity and related chronic disease risk in children and youth: a synthesis of evidence with 'best practice' recommendations. Obes Rev. 2006;7 Suppl 1:7-66.
6. Kumanyika S, Jeffery RW, Morabia A, Ritenbaugh C, Antipatis VJ. Obesity prevention: the case for action. Int J Obes Relat Metab Disord. 2002;26(3):425-36.
7. Kumanyika SK. Minisymposium on obesity: overview and some strategic considerations. Annu Rev Public Health. 2001;22:293-308.
8. Doak CM, Visscher TLS, Renders CM, Seidell JC. The prevention of overweight and obesity in children and adolescents: a review of interventions and programmes. Obesity Reviews. 2006;7(1):111-36.
9. Summerbell CD, Waters E, Edmunds LD, Kelly S, Brown T, Campbell KJ. Interventions for preventing obesity in children. Cochrane Database Syst Rev. 2005(3):CD001871.
10. World Health Organization. Global strategy on diet, physical activity and health. Geneva, Switzerland: World Health Organization; 2004.
11. Verheijden MW, Kok FJ. Public health impact of community-based nutrition and lifestyle interventions. Eur J Clin Nutr. 2005;59 Suppl 1:S66-75; discussion S6.
12. Harting J, Van Assema P. Community projecten in Nederland. De eeuwige belofte? 1st ed. Rotterdam: Optima Grafische Communicatie; 2007.
13. Sorensen G, Emmons K, Hunt MK, Johnston D. Implications of the results of community intervention trials. Annu Rev Public Health. 1998;19:379-416.
14. Rossi PH, Lipsey MW, Freeman HE. Evaluation: A systematic approach (chapter 2: Tailoring Evaluation). 7 ed. Thousand Oaks, CA: Sage; 2004.
15. Napp D, Gibbs D, Jolly D, Westover B, Uhl G. Evaluation barriers and facilitators among community-based HIV prevention programs. AIDS education and prevention : official publication of the International Society for AIDS Education. 2002;14(3 Suppl A):38-48.
16. Bamberger M, Rugh J, Mabry L. Real World Evaluation. Working under Budget, time, data and political constraints. 2nd ed. Thousand Oakes, CA, USA: Sage; 2012. 666 p.
17. Van Koperen TM, Jebb SA, Summerbell CD, Visscher TL, Romon M, Borys JM, et al. Characterizing the EPODE logic model: unravelling the past and informing the future. Obes Rev. 2013;14(2):162-70.
18. Douglah M, Boyd H, Gundermann D. Nurturing the development of an evaluation culture in public educational agencies. Annual conference of the American Evaluation Association; November; Reno, NV. USA2003

19. Merzel C, D'Afflitti J. Reconsidering community-based health promotion: promise, performance, and potential. Am J Public Health. 2003;93(4):557-74.

20. Hohmann AA, Shear MK. Community-Based Intervention Research: Coping With the "Noise" of Real Life in Study Design. Am J Psychiatry. 2002;159:201-7.

21. Connell JP, Kubisch AC. Applying a theory of change approach to the evaluation of comprehensive community initiatives: progress, prospects and problems. In: Fulbright-Anderson K, Kubisch A, Connell J, editors. New approaches to evaluating community initiatives. 2. Washington DC: The Aspen Institute; 1998.

22. Atienza AA, King AC. Community-based health intervention trials: an overview of methodological issues. Epidemiol Rev. 2002;24(1):72-9.

23. Borys JM, Le Bodo Y, Jebb SA, Seidell JC, Summerbell C, Richard D, et al. EPODE approach for childhood obesity prevention: methods, progress and international development. Obesity Reviews. 2012;Apr.(13 (4)):299-315.

24. Patton MQ. Utilization-focused evaluation. 4th ed. New York: Guilford; 2008.

25. Whitehead TL. Traditional Approaches to the Evaluation of Community Based Interventions: Strengths and Limitations The Cultural Ecology of Health and Change (CEHC) Working Papers Series, Working Paper 15 Sept 2002 ed. Maryland: University of Maryland, Department of Anthropology; 2002. p. 11.

26. WHO European Working Group on Health Promotion Evaluation. Health Promotion Evaluation: Recommendations to Policymakers. Copenhagen, Denmark: World Health Organisation, 1998.

27. Knox VJ, Gekoski WL, Kelly LE. The Age Group Evaluation and Description (AGED) Inventory: a new instrument for assessing stereotypes of and attitudes toward age groups. Int J Aging Hum Dev. 1995;40(1):31-55.

28. Davies JK, Sherriff N. The gradient in health inequalities among families and children: A review of evaluation frameworks. Health policy (Amsterdam, Netherlands). 2011;101(1):1-10.

29. Workgroup for Community Health and Development. Outline for Evaluating the Initiative Kansas2011 [cited 2012 May 12]. Available from: http://ctb.ku.edu/en/dothework/tools_tk_content_page_83.aspx.

30. The Center for the Advancement of Community Based Public Health. An Evaluation Framework for Community Health Programs. Durham, North Carolina: The Center for the Advancement of Community Based Public Health; 2000.

31. Rootman I, Goodstadt M, Potvin L, Springett J. A framework for health promotion evaluation. WHO Reg Publ Eur Ser. 2001(92):7-38.

32. Public Health Agency of Canada (PHAC). Program evaluation tool kit: Public Health Agency of Canada; 2004 [cited 2012 2 May]. Available from: www.phac-aspc.gc.ca/php-psp/toolkit-eng.php;.

33. Centers for Disease Control and Prevention (CDC). Framework for program evaluation in public health. Atlanta, Georgia, USA: Centers for Disease Control and Prevention (CDC); 1999.

34. Branch PaPH. Evaluation framework for health promotion and disease prevention programs. Melbourne: Victorian Govenrment Department of Health, 2010.

35. Centers for Disease Control and Prevention. Framework for program evaluation in public health. Atlanta, GA: Centers for Disease Control and Prevention (CDC); 1999.

36. Holden DJ, Zimmerman M. A Practical Guide to Program Evaluation Planning. Thousand Oaks, CA: Sage; 2009.

37. Roberts K, Cavill N, Rutter H. Standard evaluation framework for weight management interventions. Oxford: National Obesity Observatory (NOO), 2009.

38. Stufflebeam DL. Evaluation Design Checklist Kalamazoo, MI , USA: Western Michigan University: The Evaluation Center; 2004 [cited 2012 May 19 2012]. Available from: http://www.wmich.edu/evalctr/archive_checklists/evaldesign.pdf.

39. Glasgow RE, Vogt TM, Boles SM. Evaluating the public health impact of health promotion interventions: the RE-AIM framework. Am J Public Health. 1999;89:1322-7.

40. Mitchell RJ, Williamson AM, O'Connor R. The development of an evaluation framework for injury surveillance systems. BMCPublic Health. 2009;9:260.

41. Public Health Agency of Canada. Effectiveness of community interventions project (ECIP: framework for assessing the effectiveness of community interventions that promote health). Ottawa: PHAC; 2005.

42. Thurston WE, Vollman AR, Wilson DR, MacKean G, Felix R, Wright M-F. Development and testing of a framework for assessing the effectiveness of health promotion. Social and Preventative Medicine. 2003;48:301-16.

43. Themessl-Huber M, Lazenbatt A, Taylor J. Overcoming health inequalities: a participative evaluation framework fit for the task. Journal of the Royal Society for the Promotion of Health. 2008;128(3):117-22.

44. Swanton K. Healthy weight healthy lives: a toolkit for developing local strategies. In: Forum NH, editor. London: National Health Forum; 2008.

45. Public Health Agency of Canada. Program Evaluation Tool Kit [cited 2011 18 October]. Available from: http://www.phac-aspc.gc.ca/php-psp/toolkit-eng.php.

46. Shared Intelligence & Gillian Granville Associates. Measuring the impact of health inequalities programmes: a framework for NHS Westminster. Final report to NHS Westminster. London: SI&GGA; 2009.

47. Cornford T, Doukidis G, Forster D. Experience with a structure, process and outcome framework for evaluating an informationsystem. Omega: International Journal of Management Science. 1994;22(5):491-504.

48. Wimbush E, Watson J. An evaluation framework for health promotion: theory, quality and effectiveness. Evaluation. 2000;6(3):301-21.

49. Saunders RP, Evans MH, Joshi P. Developing a process-evaluation plan for assessing health promotion program implementation: a how-to guide. Health promotion practice. 2005;6(2):134-47.

50. World Health Organization. WHO Global Strategy on Diet, Physical Activity and Health: A framework to monitor and evaluate implementation. Geneva, Switzerland: WHO; 2008.

51. Campbell M, Fitzpatrick R, Haines A, Kinmonth AL, Sandercock P, Spiegelhalter D, et al. Framework for design and evaluation of complex interventions to improve health. BMJ. 2000;321(7262):694-6.

52. Stufflebeam DL. CIPP EVALUATION MODEL CHECKLIST [Second Edition] Kalamazoo, MI, USA: Western Michigan University: The Evaluation Center; 2007 [cited 2012 20 May 2012]. A tool for applying the CIPP Model to assess long-term enterprises. Intended for use by evaluators and evaluation clients/stakeholders. Available from: http://www.wmich.edu/evalctr/archive_checklists/cippchecklist_mar07.pdf.

53. Kegler MC, Twiss JM, Look V. Assessing community change at multiple levels: the genesis of an evaluation framework for the California Healthy Cities Project. Health education & behavior : the official publication of the Society for Public Health Education. 2000;27(6):760-79.

54. O'Connor-Fleming ML, Parker EA, Higgins HC, Gould T. A framework for evaluating health promotion programs. Health Promotion Journal of Australia. 2006;17(1):61-6.

55. Springett J. Participatory approaches to evaluation in health promotion. WHO Reg Publ Eur Ser. 2001(92):83-105.

56. Torres RT, Preskill H. Evaluation and organizational learning: past, present, and future. American Journal of Evaluation. 2001;22(3):387-95 (page 8).

57. Taylor-Powell E, Boyd HH. Evaluation capacity building in complex organizations. In: Braverman MT, Negle M, Arnold ME, Rennekamp RA, editors. Program evaluation in a complex organisational system: Lessons from Cooperative Extension New Directions for Evaluation. 120. 120 ed: Wiley Periodicals, Inc.; 2008. p. 55-69.

58. Peters, L., Molleman, G., Hommels, L., & Ploeg, M. (2003). Toelichting Preffi 2.0 (85 p.). Woerden: NIGZ.

Chapter 5

Evaluation Framework for the Integrated Approach of Overweight:

Report of an expert consultation

Marije van Koperen

Carry Renders

Ellis Vyth

Jaap Seidell

Jantine Schuit

Tijdschrift voor Gezondheidswetenschappen, 92:2, pp 75-76. 2014

(originally published in Dutch)

[this article is non-peer reviewed, it is exemplary for the process of development of the Evaluation Manual]

INTRODUCTION

The number of integrated community-wide intervention approaches (ICIAs) directed at the prevention of overweight and obesity in children is increasing in the Netherlands. Exemplary for these programmes are the implementation of reciprocal interventions, the organisation of activities directed at multiple target groups (children, parents and professionals), conducted in multiple settings (school, community, health care) and the participation of multiple stakeholders who collaborate at multiple levels (tactic, strategic and executional) [1-2]. An increasing number of municipalities are committed to this integrated approach, which focuses on both the changing individual behaviour and changing the physical and social environment that encourages the desired behaviour.

EVALUATION IS IMPORTANT BUT COMPLEX

Evaluation of such comprehensive and complex programmes is important because it:

- contributes to programme improvement,
- directs the programme,
- increases participation of stakeholders,
- provides information for accountability, necessary to influence policy makers and financiers,
- provides insight into success factors which contribute to the continuation of funding and thus sustainability of resources and assets.

However, just like the approach itself the evaluation of the ICIAs is complex. Not only because of the methodological challenges (randomization, control groups) but also because of challenges at the organizational level (evaluation budget, time, duration, competences, staff capacity and expectations from stakeholders of both the programme and its evaluation)[3-4].

EVALUATION FRAMEWORK

Five Academic Workplaces that collaborate within CIAO (acronym for the Consortium Integrated Approach to Overweight) conduct research on an ICIA to prevent overweight and obesity in children. One of the Academic Workplaces studies the evaluation and evaluation framework of the integrated community-wide intervention approach [5,6]. This study aims to develop an Evaluation Framework supportive to professionals who are responsible for

evaluation design and its implementation, and communication and use of evaluation results. This Evaluation Framework will contribute to the systematic design and implementation of the programme evaluation of the integrated approach to overweight and obesity. It should be consistent with local information needs, resources and will proof to be a contribution to programme planning, implementation and of course evaluation of the ICIA.

On November 14, 2013 an expert consultation was held that intended:

a) to achieve consensus on purpose, audience, content, design, dissemination and ownership of the ICIA Evaluation Framework

b) gain knowledge of instruments available in the field

c) obtain support for (future use) of the ICIA Evaluation Framework

Twenty-seven experts from science (research institutes and universities, n = 13), practice (GGD, n = 4; national institutions in public health, n = 4) and policy (divers, n = 6) have participated in the expert meeting. Through various assignments, both in groups and plenary, several subjects were discussed related to the Evaluation Framework for the Integrated Approach namely: purpose, audience, content, design, dissemination and ownership of the Evaluation Framework. For the group discussions the groups had a balanced distribution of the sectors. Results of the group assignments were fedback plenary.

TOOLBOX AND PLANNING TOOL

From the discussion, it appeared that the experts share the opinion that the Evaluation Framework should improve the quality of the community-wide integrated approach (and thus the effectiveness and efficiency), and should be able to harmonize and standardize evaluation methods. According to the experts the Evaluation Framework is intended for programme managers of the integrated approach. They can assign parts of the evaluation to professionals with specific skills, such as researchers (internal / external), municipal policy makers and citizens.

The Evaluation Framework, according to the experts should consist of a 'toolbox' and a 'planning tool'. The toolbox should include a complete overview of targets, indicators, outcome measures, best practices and measuring instruments. The 'planning tool' contains the roadmap of organization and implementation of the evaluation supplemented with convenient process-accompanying instruments such as checklists, a template of an evaluation plan and a process

description of a community assessment. The experts expressed their preference for a digital tool ‘that is an easy guide' including a help desk and the ability to see the current program status via a ‘dashboard’. In addition, it should be user friendly and easily accessible.

NEXT STEPS

Because no consensus is reached on the future owner of the Evaluation Framework naming an owner is delayed until a final product has been developed. To disseminate the Evaluation Framework among the target group the experts believe this can be done by both the National Coordination bureau of JOGG and RIVM, as well as university courses in Health Sciences who can insert the Evaluation Framework in their curricula. Also the offer of evaluation training to local professionals such as programme managers of the integrated approach is recommended by some experts.

From the plenary sessions and from the written evaluation of this expert consultation (17 respondents) it shows that most experts believe that during this expert consultation, consensus was reached on purpose, audience, design and dissemination. Moreover the importance of the Evaluation Framework is underlined. The majority of respondents indicated that they have gained new knowledge and insights on the evaluation of the integrated community-wide intervention approach to overweight and obesity.

A complete report (in Dutch) from this expert consultation and information on follow-up can be requested at the corresponding author.

REFERENCES

1. Bleich SN, Segal J, Wu Y, Wilson R, Wang Y. Systematic review of community-based childhood obesity prevention studies. Pediatrics. 2013 Jul;132(1):201-210.
2. Swinburn B, Egger G. Preventive strategies against weight gain and obesity. Obes Rev. 2002 Nov;3(4):289-301.
3. Bamberger M, Rugh J, Mabry L. Real World Evaluation. Working under Budget, time, data and political constraints. 2nd ed. Thousand Oakes, CA, USA: Sage; 2012.
4. Merzel C, D'Afflitti J. Reconsidering community-based health promotion: promise, performance, and potential. Am J Public Health. 2003 Apr;93(4):557-74.
5. Van Koperen TM, Renders CM, Schuit AJ, Seidell JC. Consortium Integrale Aanpak van Overgewicht: Meten is Weten. 2011 [cited 2013 6-12-2013]; Available from: http://www.ciao-onderzoek.nl/onderzoeken/evaluatie_integrale_aanpak_overgewicht.html.
6. van Koperen TM, van der Kleij RM, Renders CC, Crone MM, Hendriks AMA, Jansen MM, et al. Design of ClAO, a research program to support the development of an integrated approach to prevent overweight and obesity in the Netherlands. BMC Obes. 2014;1(1):5.

Chapter 6

Recommendations and Improvements for the Evaluation of Integrated Community-wide Interventions Approaches

Marije van Koperen
Carry Renders
Eline Spierings
Anna-Marie Hendriks
Marjan Westerman
Jaap Seidell
Jantine Schuit

Accepted for publication in Journal of Obesity

ABSTRACT

Background

Integrated community-wide intervention approaches (ICIAs) are implemented to prevent childhood obesity. Programme evaluation can improve these ICIAs but professionals involved often struggle with performance. Evaluation tools have been developed to support Dutch professionals involved in ICIAs. It is unclear how useful these tools are to intended users. We therefore researched the facilitators of and barriers to ICIA programme evaluation as perceived by professionals, and their experiences of the evaluation tools.

Methods

Focus groups and interviews with 33 public-health professionals. Data were analysed using a thematic content approach.

Findings

Evaluation is hampered by insufficient time, budget and experience with ICIAs, lack of leadership, and limited advocacy for evaluation. Epidemiologists are regarded as responsible for evaluation, but feel incompetent to perform evaluation or advocate its need in a political environment. Managers did not prioritise process evaluations, involvement of stakeholders and capacity building. The evaluation tools are perceived as valuable but too comprehensive considering limited resources.

Conclusion

Evaluating ICIAs is important but most professionals are unfamiliar with it and management does not prioritise process evaluation nor incentivize professionals to evaluate. To optimize programme evaluation, more resources and coaching is required to improve professionals' evaluation capabilities and specifically the use of evaluation.

INTRODUCTION

Worldwide, childhood obesity rates have increased over the last few decades (1). Childhood obesity is related to a wide range of psychosocial and physical problems resulting in larger health care costs (2, 3). Prevention of childhood obesity is therefore receiving increasingly more attention. So far obesity prevention efforts have unfortunately had limited effects (4, 5). To optimise obesity prevention, it is important to address both distal and proximal determinants of obesity (6-8) using an 'integrated community-wide intervention approach' (ICIA). This approach aims to conduct multiple interventions, in a collaborative effort with multiple stakeholders, that work in conjunction with each other in multiple settings and are directed towards multiple target groups in a community (5, 8-13). Such approaches are believed to be more effective because they target multiple individual and environmental determinants of obesity.

In the Netherlands the nationally coordinated ICIA 'Youth on a Healthy Weight' (In Dutch: Jongeren op Gezond Gewicht, with the acronym "JOGG") has been implemented in more than 100 municipalities since 2010. This approach is based on the French EPODE programme. EPODE is the French acronym for 'Together we can prevent obesity in children'. The JOGG-approach is based on five critical components or 'pillars': (1) political commitment, (2) public-private partnerships, (3) use of social marketing principles, (4) scientific evaluation and dissemination, and (5) linking prevention and healthcare (14-16).

To improve an ICIA such as the JOGG approach programme, evaluation is indispensable. In this paper the definition of programme evaluation refers to the systematic and objective assessment, analysis and reporting of information on an ongoing programme. It starts with the design and follows the implementation of the programme in order to understand the process and impacts of interventions, to make it possible to adapt the programme given interim findings and to inform decision making. When started simultaneously with an ICIA programme, evaluation can increase stakeholder and community participation and provide information allowing programme managers to improve the programme (17). Furthermore, it can increase accountability, as well as strategic and financial support, and enhance the sustainability of resources (18). Moreover, programme evaluation may assist in the dissemination of knowledge of the programme and of elements that are proving successful to other areas and professionals (4, 18). Although important for

programme success, the evaluation of ICIAs is challenging. ICIAs are complex interventions, and as a result their evaluation is also complex (19-22). This complexity demands evaluators to go beyond the traditional notions of evaluation research and experimental design (23-26). It also demands that the evaluation should be tailored to the characteristics of a specific ICIA, to the needs of evaluation users and stakeholders and to the expected outcomes (27-29).

Professionals who are responsible for the programme evaluation of their ICIA often struggle to carry out such evaluation satisfactorily (30-32). Within the JOGG-approach these professionals are the programme managers (usually policymakers from local government) or epidemiologists (employed by the Regional Public Health Services (RPHS)). In order to assist them with programme evaluation of the JOGG-approach, evaluation support tools have been disseminated by the National Coordination Office of the JOGG-approach (JOGG-office). These evaluation tools consist of an Evaluation Manual and additional evaluation training (33). The Evaluation Manual describes a six step evaluation process for programme evaluation of ICIAs, similar to the CDC Evaluation Framework (34) and the outline for evaluating an initiative by the Kansa University Community Toolbox (35). The design of the Evaluation Manual is based on the outcomes of a comprehensive appraisal of existing evaluation frameworks (36). It also provides a logic model for the JOGG-approach (the JOGG-model), capacity building exercises, an evaluation planning matrix, checklists and examples of evaluation practice. The evaluation training consists of four modules following the evaluation approach as described in the Evaluation Manual.

The reasons for this study were the outcomes of the pre-training assessment forms *and* discussions with programme managers and epidemiologists involved in the local JOGG-approaches in 2012 and 2013 during the evaluation training. These revealed that the evaluation budget for most new JOGG-municipalities was zero. Moreover, programme managers and epidemiologists participating in the evaluation training reported having to continuously juggle their desire to customise evaluation to their local context, needs and assets - which necessarily costs time, effort and money- on the one hand, with their need to standardise the evaluation using existing datasets, monitors and standard evaluation instruments (since hardly any or indeed no evaluation budget was available) on the other. As a consequence, only six of the 60 local JOGG-approaches had developed evaluation plans by the end of 2013. We concluded that despite support given (i.e. Evaluation Manual and evaluation training) there were a lot of barriers to programme evaluation of the local JOGG-

approach. The aim of our study was therefore twofold: 1) to explore barriers to and facilitators of programme evaluation of ICIA's and 2) to understand the experiences of programme managers and epidemiologists regarding the offered evaluation tools.

METHODS

Study design

In 2014 a qualitative study was conducted using a framework approach to collect data on both the aims of this study. For the exploration of barriers to and facilitators of the programme evaluation of ICIAs the 'Behaviour Change Wheel' from Michie (37) was used to guide semi-structured interviews and their analysis. For the second aim, experiences of the evaluations tools, we used the innovation characteristics from the 'Diffusion of Innovation' theory by Rogers (38, 39) to guide focus-groups and to analyse our findings.

Recruitment and sampling

A purposeful sampling technique was used to recruit participants for the semi-structured interviews and the focus groups (40).

Semi-structured interviews

For the semi-structured interviews participants were recruited from municipalities who had been involved in the JOGG-approach for at least one year (n=20) (Figure 1). This criterion was chosen to ensure that they had sufficient experience with the JOGG-approach and in the hope that participants would provide experiential knowledge. The participants were programme managers and epidemiologists involved in the JOGG-approach. Due to the already complex intervention approach, we choose to include representatives from JOGG-municipalities that had one programme manager and one involved epidemiologist. This decision was taken because responsibilities were then clearer. Participants were invited by email and arrangements for conducting the interviews were made by phone. The final sample consisted of eight programme managers and seven epidemiologists from nine different municipalities.

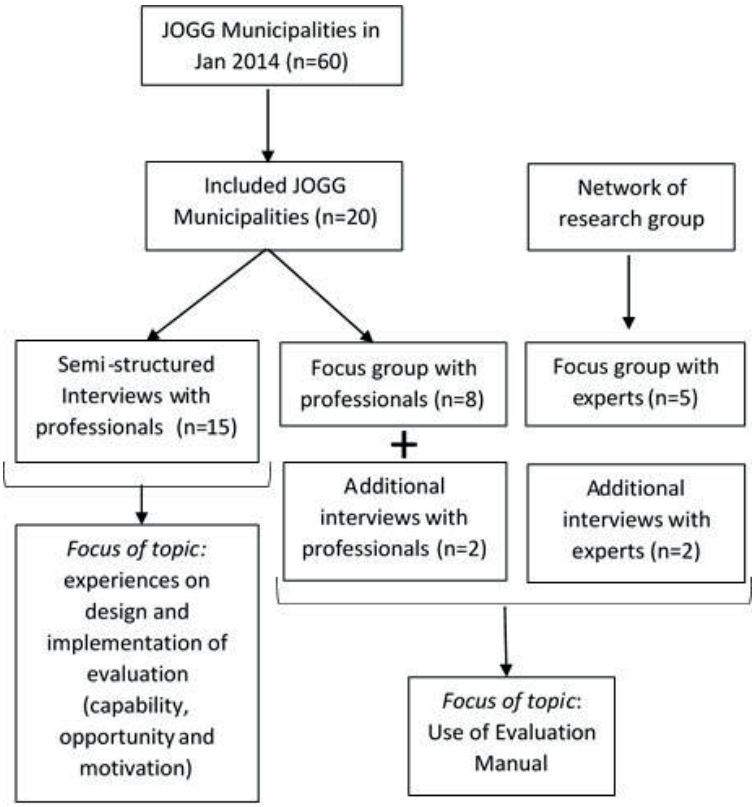


Figure 1: Graphic of study sampling

Focus groups

Two focus groups were held (Figure 1). One consisted of programme managers and epidemiologists involved in JOGG-approaches that had commenced at least one year ago (FG1). The other focus group consisted of experts in the field of community health promotion and evaluation (FG2). To recruit participants for FG1, an invitation letter was sent to the programme managers and epidemiologists involved in JOGG-approaches. Additionally, the JOGG-office sent out an announcement email to JOGG-municipalities with a participation request. Participants for FG2 were recruited from the network of the research group and were only included if they were *not* responsible for the evaluation of local JOGG-approaches. Focus group participants were afforded travel allowance and a €10 gift card. If participants did not respond, we called them one week after the invitation was sent. If participants failed to respond after three reminder calls, we excluded them from the study. When participants could not attend the focus groups (e.g., due to time limitations), we suggested an interview

(n=4). The final sample consisted of ten professionals for FG1 and the additional interviews (i.e. three programme managers and five epidemiologists), and seven experts for FG2 and the additional interviews.

Interview guide and topic list

Semi-structured interviews

The first author (MVK) and two assistant-researchers (RH; EB) together developed the interview guide (Supplementary 1). The interview guide was based on the 'Behaviour Change Wheel' (37) and was extended with questions regarding 'suggestions for improvements' and 'needs with respect to the programme evaluation'. A central component of the 'Behaviour Change Wheel' is the 'COM-B' system: Capability, Opportunity, Motivation, and Behaviour. To illustrate: evaluation (behaviour) is enabled if the target population (e.g., programme managers) have sufficient understanding how to apply the Evaluation Manual (capability); have sufficient time and financial means to apply the Evaluation Manual (opportunity); and a positive attitude towards using an Evaluation Manual (motivation).

Focus groups

The first author (MVK) and one assistant-researcher (ES) together developed the topic list for both focus groups and the additional interviews (Supplementary 2). Roger's theory, the 'Diffusion of Innovation', was used as an initial organising framework to generate topics (38, 39, 41). Rogers (2002) assumes that innovations (e.g., the Evaluation Manual) are more likely to be used if: (1) they can easily be tried (in this case, if the Evaluation Manual can be used without major changes or consequences in the organisation); (2) the relative advantage of the innovation is high (if the use of the JOGG Evaluation Manual requires less time than current procedures or Evaluation Manuals); (3) the innovation is compatible with the daily practice of users (i.e, those responsible for evaluation); (4) the innovation is not complex (if Evaluation Manual is perceived to be easy to use); and (5) the outcomes of using the innovation can be observed (if use of the Evaluation Manual leads to better goal setting or alignment of stakeholder needs). Since the experts had not been working with the Evaluation Manual, the focus of their group discussion was not based on their own experience but on their perception of use of the Evaluation Manual for programme managers and epidemiologist in general.

Data collection

Semi-structured interviews

The semi-structured interviews were conducted by RH (with programme managers) and EB (with epidemiologists) between March and June 2014 at a convenient time identified by the interviewees. Open-ended questions were used to give participants the opportunity to share their experiences on design and implementation of evaluation in their own words (42). Prior to data collection all respondents were asked to sign an informed consent form. Interviews lasted on average 53 minutes (with a range from 27-68 minutes) and were audiotaped. In order to check our interpretation of the semi-structured interviews, the respondents received a summary of their interview and were asked whether they agreed with our interpretation, or wanted to change or add anything (member check).

Focus groups

The focus groups and the additional interviews took place between January and February 2014. The focus groups were conducted at a central location and the additional interviews took place at a convenient time and location identified by the interviewees. Two weeks before the focus groups and interviews, all participants received the Evaluation Manual and prior to the data collection all signed an informed consent form. Focus groups were conducted by an experienced independent moderator (MK) and an assistant moderator (ES). Each focus group took 120 minutes and was audiotaped. Four professionals not able to attend the focus groups were subsequently interviewed. The interviews lasted on average 67 minutes (with a range from 53-120 minutes) and were audiotaped and transcribed verbatim by the interviewer (ES).

Data-analyses

The transcripts from the semi-structured interviews, the focus groups and the additional interviews were thematically analysed using open and axial coding and divided between the main themes from the respective theoretical frameworks used. This helped to structure and identify reoccurring themes (43). After this separate data analysis, data was merged where it provided additional information or overlapped data within the other framework (i.e. focus group data regarding 'feasibility of use of the evaluation manual' was merged with 'perceived opportunities to conduct programme evaluation' within the Michie theme 'Opportunity';

Focus group data regarding 'complexity of the evaluation manual' was merged with 'perceived barriers and facilitators to evaluate' within the Michie theme 'Motivation').

Semi-structured interviews

Fragmentation and open coding of the first transcript was done by the interviewers (RH; EB) and discussed with the first author (MVK) and the fifth author (MW). Subsequently, axial coding was used to code fragments in sub- or main-categories. Identified categories were divided between the main themes from the 'Behaviour Change Wheel'(37). This process resulted in a code tree that was then used to code the other interviews (Supplementary 3). The themes were the basis for describing the barriers and facilitators that programme managers and epidemiologists experienced with programme evaluation and the use of the evaluation tools.

Focus groups

In the open coding phase, two researchers (ES; MVK) independently read the transcripts of the focus groups and interviews and coded fragments. This resulted in memos and an inductive code list with in-vivo codes which were subsequently discussed. Axial coding was then used to code fragments in sub- or main-categories (ES) (Supplementary 4). During this iterative process, new relevant themes were added to the code list. Finally, both researchers conducted selective coding by summarizing the focus groups and the additional interviews. This gave more insight into explanations and causal relations within the data.

FINDINGS

Description of sample

The municipalities started the JOGG-approach between 2009 and 2013. Five programme managers and four epidemiologists were involved from the start of their JOGG-approaches. Of the interviewed programme managers only one was experienced with ICIAs, none had been involved in the evaluation of an ICIA (Table 1). Two of seven epidemiologists were experienced with ICIA evaluation. Approximately 65% of the programme managers attended less than 2 training sessions in evaluation, none attended all four sessions. Reasons given for

this limited attendance were the limited hours a week available for the JOGG-approach besides other responsibilities.

Table 1: Study sample

Semi-structured Interviews							Focus groups		
							Focus group 1 – JOGG Professionals		
	*Sex**	*Occupation***	*Employed for JOGG (hours per week)*	*Experienced with ICIA*	*Experienced with ICIA evaluation*	**Attendance to JOGG evaluation training**		*Sex**	*Occupation***
RI21	F	P	± 20	No	No	1	RF1	F	E
RI22	F	P	± 24	Yes	No	3	RF2	F	P
RI23	M	P	± 18	No	No	1	RF3	M	E
RI24	F	P	± 4	No	No	1	RF4	F	E
RI25	F	P	± 24	No	No	3	RF5	M	E
RI26	F	P	± 16	No	No	0	RF6	F	P
RI27	F	P	± 12	No	No	2	RF7	F	P
RI28	F	P	?	No	No	0	RF8	F	E
RI29	F	E	?	No	No	4	Focus group 2 - Experts		
RI30	F	E	± 8	Yes	Yes	4	RF9	F	Researcher Public Health
RI31	M	E	± 10	No	No	4	RF10	M	Entrepreneur/consultant
RI32	F	E	0	Yes	No	1	RF11	F	Researcher Public Health
RI33	F	E	± 4	Yes	Yes	3	RF12	F	Entrepreneur/consultant
RI34	M	E	?	No	No	1	RF13	F	Entrepreneur/consultant
RI35	F	E	± 24	No	No	4	Additional interviews (Professionals and Experts)		
							RI11	F	E
							RI12	F	E
							RI13	F	Researcher Public Health
							RI14	F	E

* F= Female, M=Male **P=Programme manager, E= Epidemiologist

Programme managers had approximately 16 employable hours available per week for the JOGG-approach, within these hours evaluation was not a priority and training sessions took too much of their available time during a week. More than half of the programme managers had other responsibilities, such as being a policymaker for the sport or health sector at the municipality or being a public health professional at the RPHS. The epidemiologists were

better represented at the evaluation training, more than 70% attended more than three (out of four) training sessions, although most had less hours available per week for the JOGG-approach than the programme managers. They either felt responsible for the evaluation of the JOGG-approach or were sent by their programme manager. Two epidemiologists worked for multiple JOGG-municipalities.

The epidemiologists in focus group 1 were all employed by the RPHS, the programme managers within the municipality. The experts in focus group 2 were three senior researchers in the field of public health from three Universities, two entrepreneurs at strategic level in public health, a senior researcher from a research institute specialised in overweight and a programme evaluation expert employed at a University.

Evaluation performance in local JOGG-approaches

Programme evaluation is "the systematic collection of information about the activities, characteristics, and outcomes of programmes to make judgments about the programme, improve programme effectiveness, and/or inform decisions about future programme development"(44). In general, it consists of a process and an effect evaluation in the developmental and the implementation phase for which an evaluation plan has to be written. Since the JOGG-approach needs to be adapted to local context and the needs of stakeholders and available resources, the design and implementation of the JOGG-approach differed between municipalities, and so does the programme evaluation.

Most interviewees referred to four types of evaluation that they conducted for their JOGG-approach: (1) a *process evaluation* that focused on organized activities, (2) a *process evaluation* that focused on the quality of the collaboration with implementing partners, (3) an *intermediate evaluation* of behaviour change in children, and an (4) *effect evaluation* of overweight in children. All but one of the programme managers and epidemiologists conducted either one or a combination of these evaluations. In one municipality an integrated approach preceded the JOGG-approach, commencing in 2008. Respondents from this municipality showed more capability, conducted multiple evaluation types and had more resources than other municipalities that started the JOGG-approach in the same year. Ideally programme managers should be engaged in evaluation to ensure a common understanding of the purpose and scope, to properly budget for the evaluation activities, and to clearly assign roles and responsibilities to programme stakeholders (33).

Although most programme managers were involved in the development of an evaluation plan and some were involved in data analysis, they were never involved in data collection. Often programme managers did not consider it their task to coordinate evaluation (let alone evaluate themselves) and felt no urge to fulfil these roles. For example, one programme manager completely delegated evaluation to the RPHS and to university students; she did not know who were involved with the evaluation of 'her' programme, what their tasks were, what they were planning to measure, and if they aligned their evaluation to the programme:

> *''She [epidemiologist] is responsible for the research [...]. Moreover, I believe that the programme manager should not have knowledge of all these things [research and evaluation]''* [RI21]

> *"I need to align with the researcher to understand how we are going to use it [the establishment of the Impact Assessment], because she is more involved in it than I am.''* [RI27]

This perception of responsibilities in evaluation and lack of role fulfilment may explain why programme managers were often not participating in the evaluation training and why one epidemiologist (RI9) said that the evaluation work 'group' consisted of one person (herself). As a result there was no shared responsibility for evaluation and motivation to evaluate decreased:

> *"It remains a bit tricky when no one feels responsible for it [monitoring and evaluation]. And so, who is going to complete the activity monitor? And who then makes sure that all the data will be collected and inserted?"* [RI29]

Epidemiologists were mostly involved in an intermediate evaluation of behaviour change or an effect evaluation of overweight in children in which they conducted baseline measurements, follow-up data collection and data analysis.

Barriers to and facilitators of programme evaluation

- *Knowledge and skills*

Most epidemiologists and programme managers were struggling when they attempted to conduct a programme evaluation within ICIAs because they were only familiar with outcome evaluations:

''This [the evaluation of the JOGG-approach] is a different kind of evaluation and research than what I'm used to, I'm not experienced in doing this and I feel I really miss this expertise.'' [RI26]

Evaluation was further complicated because implementing an ICIA like the JOGG-approach itself was new for most programme managers and epidemiologists (Table 1). Some interviewees therefore said they required different or more specific evaluation support (e.g., measurement instruments, indicator overview, budget calculations, information on how to conduct qualitative research, how to set up a community intervention trial):

"I expected more of the JOGG evaluation training […] like, this is what the evaluation looks like and this is the data you need to collect, and this is how we are going to do it" [RI29]

A majority of epidemiologists understood that setting concrete evaluation goals for their ICIA was important. However, most believed this to be difficult, as they did not want to be accountable for such specific and unattainable goals:

"We also set milestones, like the percentage of kids that should exercise, or 10% of our primary schools this year will have a healthy policy. And that is what we measure." [RI21].

''[…] for that we still haven't formulated a specific objective … it remains truly difficult to be presented with a bill for goals that appear not to be feasible in the end.'' [RI31]

Some programme managers clearly made use of the Evaluation Manual, they involved external parties (e.g., primary schools and a health centre) to set such goals and made agreements about who would actually implement, develop and conduct the evaluation of these goals:

''We started with a meeting for all stakeholders [for the evaluation planning] to create support. In this meeting we set goals and objectives … for processes, behaviour and outcomes … people could highlight the ones they believed were most important.'' [RI25].

In line with this, several programme managers emphasized that clear communication about evaluation towards stakeholders (e.g., RPHS, epidemiologists, employees of a sport-centre, aldermen, school directors) was important (Table 2). They said that clearly explaining the relevance and goals of evaluation, and aligning evaluation efforts was most important. However, some programme managers admitted they did not always invest in such communication resulting in less attention to all aspects of programme evaluation, for instance to process evaluation:

> *''I have to say that the process evaluation received less and less attention. Although we had made really clear arrangements and activities of what we were going to do. And now, the process evaluation has faded into the background.''* [RI26]

- *Support and finance for programme evaluation*

Programme managers said the opportunity to evaluate improved if it was possible to discuss the evaluation with a group or person who felt responsible for evaluation. They struggled with taking responsibility to start the evaluation. This apprehension caused them to consider collaboration with an epidemiologist, researcher, or evaluation work group. Programme managers felt this collaboration to be crucial for the performance of programme evaluation of ICIAs (Table 2). Additionally, availability of students, volunteers, activity coordinators, and public private partners were considered important since they often collected data for the evaluation. In this way, the programme managers could save time and financial resources:

> *"The university said it would like to contribute to the evaluation of the JOGG-approach with X number of students. And of course this includes some support from the university.''* [RI23]

Respondents mentioned that financial resources often imposed a barrier since municipalities had just faced drastic budget cuts and decentralization of tasks to municipalities. Moreover, time was a barrier when programme managers needed to invest in new activities and explain the integrated approach to stakeholders (i.e., when the JOGG-approach was not based on an existing ICIA), when limited professionals were available for the JOGG-approach at local level, when no time was allocated for evaluation (i.e., some epidemiologists were employed for the JOGG-approach for 2 hours a week), or time was used inefficiently due to lack of professionals

with experience in the evaluation of ICIAs. One programme manager (RI23) (who was employed for 18 hours a week to the JOGG-approach) explained this was insufficient to manage such a comprehensive programme with high expectations:

> *"JOGG itself states that a half FTE for a programme manager is sufficient. I have my doubts."* [RI23]

Most epidemiologists thus considered it important to show the amount of time that was needed for a proper evaluation:

> *"It is especially prior to conducting an evaluation that you should take the time and talk to each other about "What information do we track?", "What do we want to register?", "Who feels responsible?" and "Who is going to do it?" and this all takes quite some time."* [RI29]

Additionally, one epidemiologist said that, even though 10 hours were available for evaluation, he felt these were used inefficiently due to lack of experience; more time was needed to get acquainted with the programme evaluation process. Especially in smaller municipalities, sufficient time to conduct all sorts of evaluation was considered unfeasible. Epidemiologists considered programme managers to be responsible for obtaining more financial resources to make evaluation feasible and added that – when a municipality considers it important to evaluate - budget is made available. Contrastingly, several programme managers stated it was extremely hard to influence what level of resources would be made available from the municipal budget and allocated to process evaluation. To make evaluation more feasible, programme managers from smaller municipalities suggested the organisation of programme evaluation at a regional level and the alignment of data collection. In this way evaluation expertise, resources, and tools (e.g., questionnaires) could be shared:

> *""... I know that [a baseline in a sample group] is far preferable to group data [the whole population] but we just do not have time for it. So, we will say that 'now N percent of the target group drinks water' and next year 'so much percent will drink water'. And that is enough for us and for the local government."* [RI33].

To stimulate the sharing of evaluation responsibility, it was considered important that external partners had a stake in evaluation. For example, teachers and directors of primary

schools were often interested in diet and physical activity, and overweight of 'their' children, and therefore often agreed to participate in evaluation. Some programme managers indicated finding such participative stakeholders was difficult when the JOGG-approach was poorly understood:

> *"Sometimes that penny [to know what the JOGG-approach is] just has not dropped yet ... I'm not the JOGG-approach, but they are! The stakeholders, the ultimate target group, the community, they are the JOGG-approach!"* [RI22]

Moreover, collecting data among 12-18 year olds was considered difficult since these youngsters were overwhelmed by surveys, and schools were sometimes concerned about their privacy. Furthermore, private partners were not always willing to contribute financially to evaluation or to participate in conducting a programme evaluation. Additionally, student or private partners sometimes gathered evaluation data of insufficient quality:

> *"Quite often I get handed rattled off pieces, obviously motivation is lacking. "* [RI21]

- *Motivation of programme managers and epidemiologists to perform programme evaluation*

The main motivations of programme managers and epidemiologists to conduct an evaluation were: interest in childhood obesity prevention and ICIA; seeing evaluation as a natural part of the work process; increasing accountability for the JOGG-approach towards the aldermen and council; understanding of why the JOGG-approach is effective; motivation of stakeholders to participate in the JOGG-approach; securing of resources for the JOGG-approach; and the opportunity to present the results on a national level and compare their progress with other municipalities (Table 2):

> *"…It's just really fun to work on a project which is doing good and has a national reputation. If the results are called at the national JOGG conference, than it is very nice to hear that our JOGG-approach is doing so well. It is often very hard work and we slog at it but it still very stimulating*. [RI22].

> *"... they [strategic and tactical managers] would occasionally like to have numbers, they want to show that the programme works and they want to know whether it works."* [RI19]

Programme managers and epidemiologists were demotivated by a perceived lack of the necessary knowledge and skills to conduct an evaluation:

> *''The process evaluation, I find it extremely difficult ... so it actually is a kind of delay although I do see that's very important.''* [RI26]

Another aspect that can cause a lack of motivation to evaluate is the strong interest of tactical management (i.e., aldermen) and strategic management (i.e. department or sector manager) in the implementation rather than the evaluation of the ICIAs. Especially in smaller municipalities, interviewees considered it not worth their while to shift scarce resources away from implementation to conduct process, intermediate or effect-evaluations. Also programme managers explained that it did not make sense to start evaluation if activities had not yet been implemented, which epitomises their (lack of) understanding of the importance of programme evaluation to the optimisation of programme:

> *"I reason very much in the interest of my people and my people have no interest in such monitoring, they have an interest in policy measures, activities, incentives, whatever… so that is my priority.''* [RI28]

> *"I can now emphatically focus on evaluation, but if we don't do anything, then I actually do not need to evaluate, so the focus is on performing and doing.''* [RI23]

Although in numerous cases no budget was allocated for evaluation in any form, where municipalities were interested they tended to prioritise effect evaluation.

> *"... [We noticed] that they [managers and aldermen] would occasionally like to have numbers, they want to show that the programme works and they want to know whether it works."* [RI29]

As a result, programme managers were less motivated to carry out other types of evaluation:

> *"…so that component [the effects] I can measure ..., we report about this as well, which is why we have determined this our priority''* [RI21]

Table 2: Findings of this study described as factors in their preferred end state

Evaluation determinants	Programme managers / Epidemiologists*
Knowledge and skills	(+) Knowledge and experience with evaluation
	(-) Limited knowledge and experience with evaluation of ICIAs
	(-) Limited understanding of terminology (monitoring vs evaluation vs research)
	(-) Limited knowledge and experience with process evaluation
	(-) Poor knowledge of where to find evaluation support
	(-) Unaware of need for evaluation support of ICIA
	(+) Understanding that external parties need to be involved to collaboratively set evaluation goals
	(+) Knowledge about the relevance of making agreements about who would actually implement and evaluate these goals
	(+/-)Awareness of the need to communicate about evaluation towards stakeholders, but not always investing in such communication
	(-) Not aware evaluation needs to be managed
Support and finance	(+) availability and good collaboration with an epidemiologist for evaluation expertise and responsibility for evaluation
	(-) scarcity of time to conduct comprehensive evaluations
	(+/-) availability of students, volunteers, coordinators, public and private partners to collect data
	(-) difficulty of obtaining data from certain target groups
	(+/-) external partners having a stake in evaluation and motivated to conduct one
	(-) stakeholders not knowing the JOGG-approach
Motivation	(-) Not considering it their task to evaluate their ICIA
	(-) Limited participation in the evaluation trainings and meetings offered by the JOGG office
	(+) Interested in evaluation since it could be used to improve the JOGG approach and achieve their goals
	(+/-) Feeling capable of conducting an evaluation after initial experience with it
	(+) Combined personal interest in evaluation and the topic of childhood obesity prevention and ICIAs
	(+) Opportunity to present the results on a national level and compare progress with other municipalities
	(+/-) Municipal interest in effect evaluation, but not in process evaluation
	(+) Evaluation as natural part of the work process
	(+) Guidance from an evaluation expert (coach or trainer)
	(-) A comprehensive evaluation manual, perceived to be in-compatible with available resources

* A factor functions as a barrier (-) when it is not yet in place, it functions as a facilitator (+) when it is already in place, and as an uncertain factor (+/-) when it is in place to some extent, or if it sometimes functions as a barrier and sometimes as a facilitator.

Use and expectations of the evaluation manual

Most programme managers and epidemiologists knew the Evaluation Manual but not a single one of the respondents had used it as intended. Despite this limited use, most respondents were positive about the existence of the Evaluation Manual; it was considered a relevant and valuable innovation to support planning and performance of an ICIA programme evaluation. Experts said the Evaluation Manual was relevant because they see programme managers and epidemiologists struggle with the evaluation of ICIAs. Several reasons for limited use of the Evaluation Manual were mentioned: almost all respondents said the Evaluation Manual was too comprehensive; Following the steps in detail would definitely exceed the proposed evaluation budget as mentioned in the Evaluation Manual (10-15% of total programme budget) or available time; Most programme managers and epidemiologists said their financial resources were insufficient to even implement the ICIA, and therefore they could not find the time needed for evaluation or could not use their time for evaluation purposes:

> *"I have 3 hours a week for two municipalities"* [RF1].

> *"If a municipality does not recognize the importance of it [conducting the evaluation following the Evaluation Manual] then it does not happen"* [RI32]

However, experts also reasoned that evaluation budget could easily be obtained from funders (i.e. municipality, grants), if programme evaluation had been included in the initial planning of the ICIA and requesting funding for it.

Another reason offered for limited use of the Evaluation Manual was that some parts were considered to be more useful than others, but opinions on this differed. Some respondents were positive about a graphic illustrating growth and achievement of programme-goals in a time-line saying it helped them to manage the expectations of stakeholders. Others said that the guiding notebooks presented in the Evaluation Manual helped them to process theory into practice. Some programme managers and epidemiologists found the JOGG logic model especially relevant, while others said it was more facilitative to develop their own logic model. Furthermore, experts suggested the logic model could be used as a guideline for the planning of programme evaluation in addition to the six-step evaluation roadmap -:

> *"I would recommend using evaluation planning following the JOGG-model and maybe less strict through the six-stepped roadmap. And to determine evaluation type from goals on different levels, and provide examples to make this concrete."* [RF9]

All respondents added that the main reason for only using parts of the Evaluation Manual was that reading the Evaluation Manual was too time consuming for professionals at the operational level. Another reason mentioned for this limited use was that it was difficult to use the suggested evaluation approach in an ICIA that had already started and was in an implementation phase. Since the Evaluation Manual started by defining stakeholders and collaboratively setting goals and objectives the respondents felt as if they were going back to the drawing board if they had to follow the Evaluation Manual. They wanted to progress and did not see the advantage of a new approach to a programme which had already been approved by funders and management. Another reason for limited use was that the evaluation approach was difficult to align with the emphasis of the council or aldermen on effect evaluation:

> *"The town council wanted to see a decrease in BMI at any price […] the alderman's' head is on the block for it"* [RF1].

Although some aldermen were open to discussion and liked to have expectations managed:

> *"He wants to know that stakeholders are involved in the right way, those stakeholders are important to him and to the programme."* [RF2]

All respondents said the Evaluation Manual could be very useful but that the evaluation approach proposed in the Evaluation Manual was too linear, theoretical and comprehensive for daily practice. To improve the Evaluation Manual, experts suggested emphasising the involvement of stakeholders in programme design and evaluation, underscoring the importance of synchronizing ambitions and expectations of several stakeholders in the community and expressing bottom-up strategies with examples in order to involve the community.

DISCUSSION

Our main findings indicate that those responsible for programme evaluation - programme managers and epidemiologists - often lack specific *knowledge and skills* to conduct a programme evaluation (capability) in its fullest, perceive *limited time and financial resources* (opportunities) to conduct a comprehensive programme evaluation, and are seldom *internally or externally motivated* (lack of incentives) to conduct a programme evaluation. We also found that professionals involved in ICIAs do not often use the Evaluation Manual provided and that evaluation trainings were poorly attended – especially by programme managers. We will now discuss these findings and recommend ways to improve programme evaluation.

First of all, even though programme managers understood the importance of evaluation, they did not invest in its management. A perceived lack of time and role related expectations may explain this. Programme managers often felt forced to either invest time in implementation or in evaluation and often prioritised implementation. If they were investing time in evaluation, they focused on assessing outcomes rather than processes. Programme mangers did not see reflection and adaptation - as part of process evaluation - as ways to continuously improve their ICIA. Insufficient programme evaluation knowledge and skills seem to explain the limited involvement of programme managers (29, 30, 45). Besides insufficient skills, role related expectations seem to explain the limited involvement of these managers. Often epidemiologists were seen as evaluation experts and therefore regarded responsible for evaluation. Unfortunately, epidemiologists felt unable to fulfil this role since programme evaluation of ICIAs was new to them. Even though they were familiar with quantitative outcome and impact evaluations, they required new skills and support (e.g., guidance and management) to conduct a process evaluation (as part of a programme evaluation). This need for more technical evaluation support was also felt by others (18, 30, 45-47).

Secondly, time, manpower and money, were insufficiently allocated to evaluation and generating funding (i.e., budget) for evaluation proved to be difficult. One important reason for poor generation and allocation of evaluation resources was related to insufficient knowledge; professionals – and especially programme managers – often did not know *what* and *how* they had to evaluate, and seemed unaware that evaluation requires management

and guidance. Additionally, some professionals did not see the benefits of programme evaluation; they perceived more cons than pros (e.g., taking too much money, work). This is in line with Torres and Preskill (2001) who found that professionals were concerned evaluation would lead to undesirable results (e.g. dissatisfaction of capability) and therefore have a reduced motivation to engage in or manage the evaluation. On the contrary, we also found some professionals – especially epidemiologists, motivated to evaluate; these were mostly epidemiologist who liked the idea that it was 'new' to work within in ICIA, who believed evaluation was important for the ICIA or had personal interest in (reduction of) childhood obesity prevention. Unfortunately, these motivated professionals were often demotivated by strategic and tactical managers allocating scarce resources to the ICIA and showing more interest in implementation than evaluation. This perception of interest in implementation rather than evaluation is also supported by others (30). Another reason for limited evaluation resources is the lack of public-private partnerships at the local level. When private parties finance activities, the municipal budget can be allocated for program management and evaluation. When private parties are not involved, the ICIA budget was mainly allocated to the implementation of activities.

Thirdly, the lack of time, role related expectations and poor allocation of evaluation budget also contributed to the limited use of the Evaluation Manual and may explain why programme managers scarcely visit evaluation trainings. Although the Evaluation manual was seen as a useful tool for more concrete and practical programme evaluation, it was considered too comprehensive (i.e., taking too much time) and linear for practical use. Moreover, stakeholders perceived programme accountability as achieved through assessing effects at health outcome level, rather than a full programme evaluation. This may also explain why only parts of the comprehensive Evaluation Manual were used.

Recommendations for practice

Firstly, we recommend increasing skills and knowledge of programme managers and epidemiologists. They need to learn how to plan, conduct and advocate programme evaluation and involve stakeholders throughout the evaluation process. Learning these new skills can be stimulated through providing technical support for the design and implementation of the evaluation and an Evaluation Manual with multiple stratified versions

as well as a stronger emphasis on stakeholder involvement. An evaluation training should be made mandatory for programme managers and epidemiologists and provided at the municipality and supported by strategic and tactical managers of the municipality. The Evaluation Manual can give direction during or structure to the evaluation training.

Secondly, we recommend making clear agreements as to the roles and responsibilities between stakeholders in the ICIA evaluation. Programme managers' should realize evaluation requires their guidance and management and they should take charge of the planning and performance of the programme evaluation. Epidemiologists should lead outcome evaluation, establish the evaluation methodology and measurement instruments, and involve stakeholders (e.g. defining needs and resources). Policy makers could be involved in the evaluation of the municipal structure and organisation and specify the municipal evaluation budget. Therefore increased communication between all stakeholders is of crucial importance.

Thirdly, we recommend investing in convincing strategic and tactical managers that the results or benefits of evaluation outweigh the costs. Programme managers and epidemiologist can, for example, emphasise that evaluation is useful for programme improvement, has positive consequences for programme continuation and that these outweigh the costs related to planning and performing programme evaluation (37, 48).

Fourthly, we recommend ensuring resources are allocated to evaluation. This can be achieved by involving private stakeholders and making an explicit decision to generate and allocate evaluation resources *before* designing the evaluation (49). Therefore, we recommend that programme managers communicate the evaluation plan and the necessity of programme evaluation to *all* stakeholders and ensure roles are clearly divided between them. When multiple stakeholders are involved in planning and conducting the programme evaluation, it is more likely resources and necessary pre-conditions for programme evaluation will be put in place.

Fifthly, the municipal organisation is recommended to increase the dialogue on evaluation. This might be achieved through standardizing programme evaluation in policy documents and

establishing evaluation workgroups. The JOGG-office can stimulate this dialogue by requesting a specific evaluation budget attached to the municipalities' ICIA description. They should also discuss the relevance of programme evaluation for the success of the JOGG-approach in the first exploratory talks between a JOGG account-manager from the JOGG-office and tactical manager who will decide whether or not the municipality will participate in the JOGG-approach.

Strengths and limitations

The strengths of this study are the open character of the interviews, member checks and heterogeneity of our data. Although respondents knew they would be interviewed on the evaluation of JOGG, and some received questions prior the interview, they seemed comfortable with providing sensitive data and were not inclined to give socially desirable answers (Pope et al, 1995). Moreover, since respondents had different roles in ICIAs, and represented both relatively small and large municipalities and five different provinces, we obtained a panoramic view on facilitators and barriers. A limitation of the study is that theoretical saturation was not reached due to the small number of respondents and the context in which the programme manager and epidemiologist worked was not explicitly taken into account. Additionally, not one of the respondents had used the Evaluation Manual as intended which limited their full understanding of its use when conducting a programme evaluation.

CONCLUSION

Programme evaluation is an important element of ICIAs such as JOGG, but is often omitted in the current complex policy and political environment. Evaluation is often regarded as too comprehensive or focus in purely on outcome evaluation. Furthermore, *implementation* rather than *evaluation* absorbs most resources. Additionally, evaluating ICIAs is new for many professionals and not well managed. In this context, an Evaluation Manual seemed insufficient to stimulate programme evaluation. Usefulness of an evaluation manual might improve by prioritising evaluation, providing evaluation incentives and encouraging municipalities to adjust organisational preconditions. Additionally, bottom-up strategies such as involvement of the community and synchronising ambitions and expectations of

stakeholders is necessary. Assigning a coach to the local ICIA organisation may be a valuable way to implement these bottom-up strategies. This evaluation coach should support the programme manager and the epidemiologist in involving the community (target group and stakeholders), to raise awareness of the importance of evaluation at operational, tactical and especially at the strategic level (for obtaining resources) and give support by applying the Evaluation Manual in the local context given available resources.

Supplementary 1: Interview guide for semi-structured interviews with operationalized concepts from "The Behaviour Change Wheel" (37)

1. Introduction (with informed consent)

2. Opportunities

- What are prohibiting factors for the evaluation?
- What are promoting factors?
- Is there sufficient budget to evaluate the JOGG-approach?
- What was your role in budget generating/ allocating (money, resources, personnel) for evaluation? Do you think that your role should have been done by someone else? If you could do it again, would you do it differently?
- Has anyone helped you in generating budget / resources?
- What do you think that your colleague's think of the evaluation of the JOGG-approach?
- Is there anyone in the organization that supports or stimulates the evaluation? Can you tell us more about that? Who is it and how does that person motivate?
- How did you experience the evaluation training and evaluation manual offered by the JOGG-office?
- How can evaluation be improved in the future?
- How could you help to better carry out the evaluation?

3. Motivation

- What is your view on the evaluation of the JOGG-approach?
- How do you feel / what is your opinion about the assessment handbook for and during the evaluation of the JOGG-approach?
- How do you feel / what is your opinion about the assignments between training sessions?
- What do you think would happen if the JOGG-approach is not evaluated?
- Have you previously evaluated such a large program, or played a part in it? How have you experienced that?
- When you evaluate does your opinion on the evaluation of the JOGG-approach play a role? Why / why not?

- How does 'priority' play a role in the evaluation of the JOGG-approach?
- To what extent do you feel responsible for evaluating the JOGG-approach? Why / why not?

4. Capability

- How should you evaluate the JOGG-approach?
- How do you evaluate the JOGG-approach according to the evaluation manual?
- To what extent do you have the capacity to carry out the evaluation process in satisfaction?
- How easy or how difficult is it for you to evaluate the JOGG-approach?
- To what extent do you know what is expected of you within the evaluation process of the JOGG-approach?
- How can you keep a good overview during the evaluation of the JOGG-approach?
- To what extent do you manage to understand the needs of different stakeholders involved in the JOGG-approach?
- How could you be supported to carry out the evaluation?

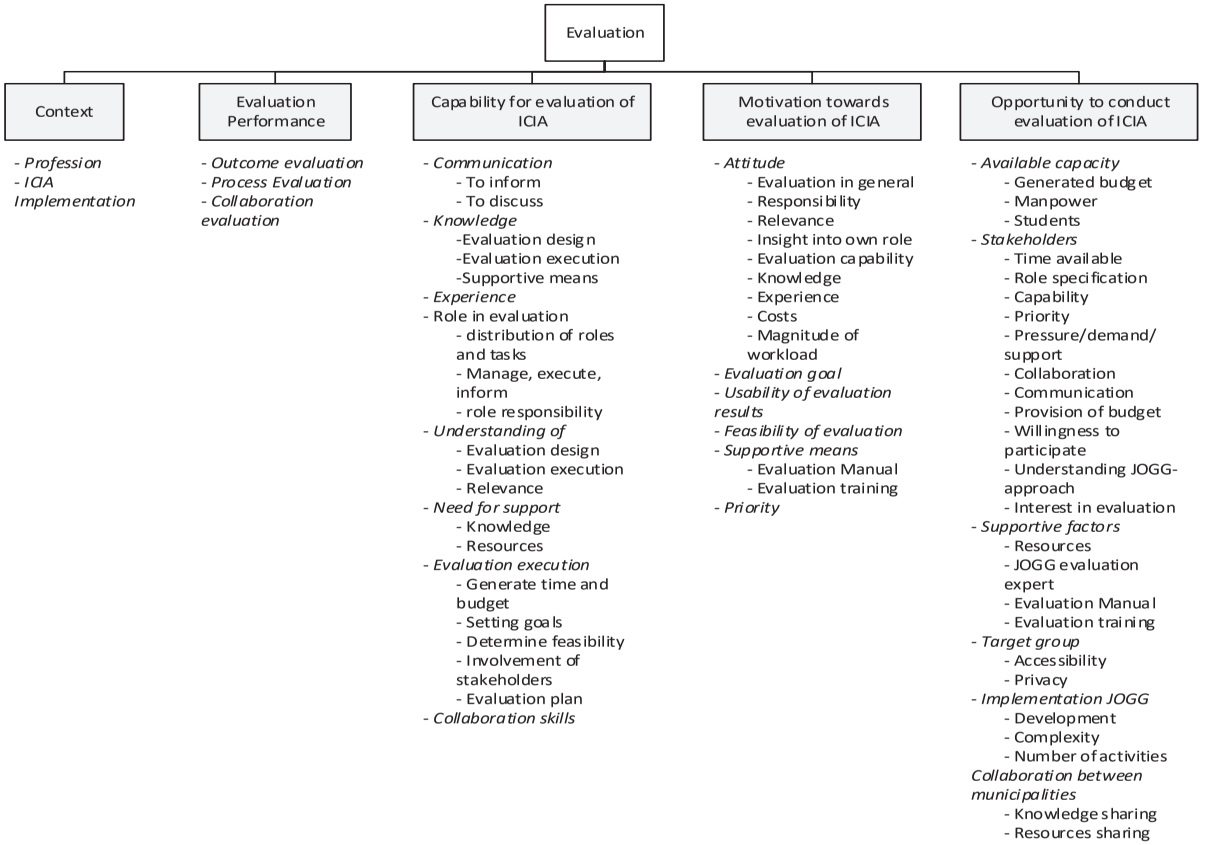
5. Closing

Supplementary 2: Topic list for the focus groups and additional interviews regarding the Evaluation Manual based upon the innovation characteristics of the Roger's Diffusion of Innovation theory (38)

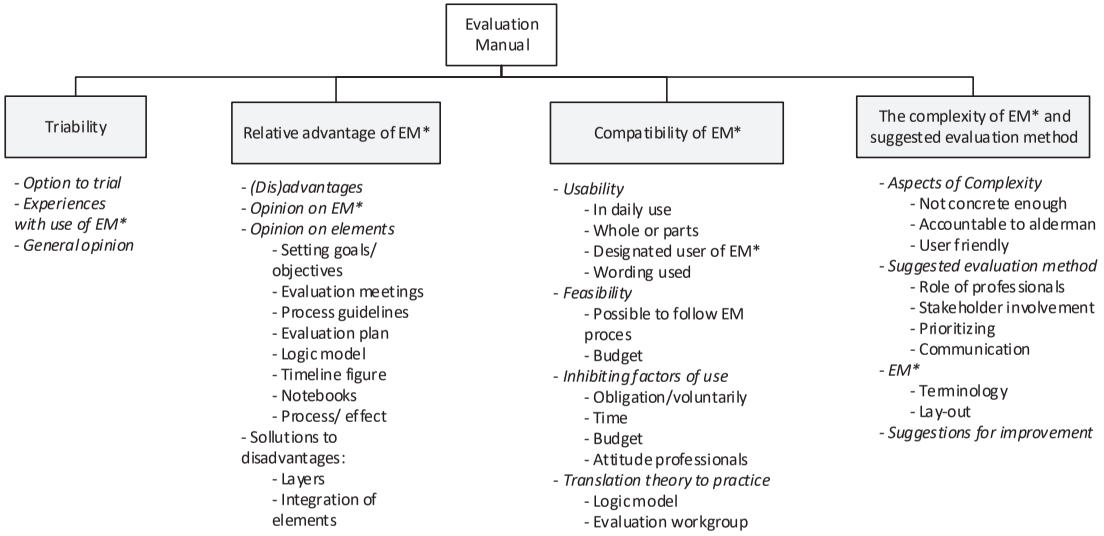
Theme	Topics
Introduction	Introduction & Informed consent
	Goal clarification
Knowledge	Knowledge and awareness of EM*
Relative advantage	Opinion on EM*
	Opinion on additional tools in EM*
	Any (dis-)advantages of EM*
Compatibility	Usability of EM* in practice
	Perceived designated user
	Starting point of use
	Description of use
	Experiences and expectations of use
	Alignment of EM* use with programme budget
	Compatibility of EM* with organisational policy regarding evaluation
	Risks or negative consequences for organisation in step-wise use of EM*
	Personal reservations for step-wise use of EM*
	Missing information/ necessary add-ins
Attainability	For non-users: reservations for use (prohibiting factors)
	Necessary factors to stimulate use
Complexity	Complexity in use
	Opinion on offered evaluation method in EM*
	Suggestions for improvements to stimulate use
Lay-out	Opinion on lay-out
	Suggestions on lay-out improvements

* EM = Evaluation Manual

Supplementary 3: The code tree for the axial coding of the fragments of the semi-structured interviews



Supplementary 4: The code tree for the axial coding of the fragments of the focus groups



*EM = Evaluation Manual

REFERENCES

1. WHO. Global status report on noncommunicable diseases 2014. Geneva, Switzerland: World Health Organization, 2014.
2. WHO. Obesity and overweight, Fact sheet N°311 Geneva, Switserland: World Health Organization; 2014 [updated August 2014; cited 2014 May 7]. Factsheet on worldwide overweight and obesity prevalence]. Available from: http://www.who.int/mediacentre/factsheets/fs311/en/.
3. Livingstone MBE. Childhood obesity in Europe: a growing concern. Public Health Nutrition. 2001;4(1a):109-16.
4. Gubbels JS, Mathisen FKS, Samdal O, Lobstein T, Kohl LFM, Leversen I, et al. The assessment of ongoing community-based interventions to prevent obesity: lessons learned. BMC Public Health. 2015;15:216.
5. Thury C, de Matos CV. Prevention of childhood obesity: a review of the current guidelines and supporting evidence. South Dakota medicine : the journal of the South Dakota State Medical Association. 2015;Spec No:18-23.
6. Hendriks A-M, Gubbels JS, De Vries NK, Seidell JC, Kremers SPJ, Jansen MWJ. Interventions to Promote an Integrated Approach to Public Health Problems: An Application to Childhood Obesity. Journal of Environmental and Public Health. 2012;2012:14.
7. Seidell J, Halberstadt J. Tegenwicht: Prometheus, Uitgeverij; 2011.
8. Seidell JC, Halberstadt J. The Global Burden of Obesity and the Challenges of Prevention. Annals of Nutrition and Metabolism. 2015;66(suppl 2)(Suppl. 2):7-12.
9. Bleich SN, Segal J, Wu Y, Wilson R, Wang Y. Systematic review of community-based childhood obesity prevention studies. Pediatrics. 2013;132:201-10.
10. Millar L, Kremer P, de Silva-Sanigorski A, McCabe MP, Mavoa H, Moodie M, et al. Reduction in overweight and obesity from a 3-year community-based intervention in Australia: the 'It's Your Move!' project. Obesity reviews : an official journal of the International Association for the Study of Obesity. 2011;12 Suppl 2:20-8.
11. Stein D, Weinberger-Litman SL, Latzer Y. Psychosocial perspectives and the issue of prevention in childhood obesity. Frontiers in public health. 2014;2:104.
12. de Silva-Sanigorski AM, Bell AC, Kremer P, Nichols M, Crellin M, Smith M, et al. Reducing obesity in early childhood: results from Romp & Chomp, an Australian community-wide intervention program. Am J Clin Nutr. 2010;91(4):831-40.
13. Huang TT, Drewnoksi A, Kumanyika S, Glass TA. A systems-oriented multilevel framework for addressing obesity in the 21st century. Preventing chronic disease. 2009;6(3):A82.
14. Van Koperen TM, Seidell JC. Overgewichtpreventie, een lokale aanpak naar Frans voorbeeld. Praktische Pediatrie. 2010;2(4):10-4.
15. Borys JM, Le Bodo Y, Jebb SA, Seidell JC, Summerbell C, Richard D, et al. EPODE approach for childhood obesity prevention: methods, progress and international development. Obes Rev. 2012;13(4):299-315.
16. Van Koperen TM, Jebb SA, Summerbell CD, Visscher TL, Romon M, Borys JM, et al. Characterizing the EPODE logic model: unravelling the past and informing the future. Obesity reviews : an official journal of the International Association for the Study of Obesity. 2013;14(2):162-70.
17. Cullen A, Giles T, Rosenthal J. Evaluating Community-based Child Health Promotion Programs: A Snapshot of Strategies and Methods. 2006.

18. Bamberger M, Rugh J, Mabry L. Real World Evaluation. Working under Budget, time, data and political constraints. 2nd ed. Thousand Oakes, CA, USA: Sage; 2012. 666 p.

19. Atienza AA, King AC. Community-based health intervention trials: an overview of methodological issues. Epidemiol Rev. 2002;24(1):72-9.

20. Campbell M, Fitzpatrick R, Haines A, Kinmonth AL, Sandercock P, Spiegelhalter D, et al. Framework for design and evaluation of complex interventions to improve health. BMJ. 2000;321(7262):694-6.

21. Nastasi BK, Hitchcock J. Challenges of evaluating multilevel interventions. American journal of community psychology. 2009;43(3-4):360-76.

22. Stokols D. Translating Social Ecological Theory into Guidelines for Community Health Promotion. American Journal of Health Promotion. 1996;10(4):282-98.

23. Nutbeam D. Evaluating Health Promotion—Progress, Problems and solutions. Health promotion international. 1998;13(1):27-44.

24. Macdonald G, Veen C, Tones K. Evidence for success in health promotion: suggestions for improvement. Health education research. 1996;11(3):367-76.

25. Whitehead TL. Traditional Approaches to the Evaluation of Community Based Interventions: Strengths and Limitations The Cultural Ecology of Health and Change (CEHC) Working Papers Series, Working Paper 15 September 2002 ed. Maryland: University of Maryland, Department of Anthropology; 2002. p. 11.

26. Sanson-Fisher RW, Bonevski B, Green LW, D'Este C. Limitations of the randomized controlled trial in evaluating population-based health interventions. American journal of preventive medicine. 2007;33(2):155-61.

27. Craig P, Dieppe P, Macintyre S, Michie S, Nazareth I, Petticrew M. Developing and evaluating complex interventions: the new Medical Research Council guidance. The BMJ. 2008;337:a1655.

28. Green LW, Sim L, Breiner H. Evaluating Obesity Prevention Efforts: A Plan for Measuring Progress. Committee on Evaluating Progress of Obesity Prevention Effort, Food and Nutrition Board, Institute of Medicine, editors. US, Washington, DC: National Academies Press;; 2013.

29. Torres RT, Preskill H. Evaluation and Organizational Learning: Past, Present, and Future. American Journal of Evaluation. 2001;22(3):387-95.

30. Kegeles SM, Rebchook GM, S. T. Challenges and facilitators to building program evaluation capacity among community-based organizations. AIDS Education and Prevention. 2005;17(4):284-99.

31. Harting J, Van Assema P. Exploring the conceptualization of program theories in Dutch community programs: a multiple case study. Health Promotion International. 2011;26(1):23-36.

32. Peters H. Een onderzoek naar de integrale aanpak van overgewicht bij kinderen. De EPODE methode in de praktijk in Twente. Enschede: University of Twente; 2010.

33. van Koperen TM, van der Kleij MJJ, Renders CM, Crone MR, Hendriks AM, Jansen M, et al. Design of CIAO, a research program to support the development of an integrated approach to prevent overweight and obesity in the Netherlands. BMC Obesity. 2014;1(5):1-12.

34. Centers for Disease Control and Prevention (CDC). Framework for Program Evaluation in Public Health. Atlanta, Georgia, USA: Centers for Disease Control and Prevention (CDC); 1999.

35. Workgroup for Community Health and Development. Outline for Evaluating the Initiative Kansas2011 [cited 2012 May 12]. Available from: http://ctb.ku.edu/en/dothework/tools_tk_content_page_83.aspx.

36. Van Koperen TM, Renders CM, Schuit AJ, Seidell JC. Comprehensive appraisal of evaluation frameworks for integrated community-wide interventions. Submitted.

37. Michie S, van Stralen M, West R. The behaviour change wheel: A new method for characterising and designing behaviour change interventions. Implementation Science. 2011;6(1):42.

38. Rogers EM. Diffusion of preventive innovations. Addictive Behaviors. 2002;27(6):989-93.

39. Sahin I. Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on rogers. The Turkish Online Journal of Educational Technology. 2006;5(2):3.

40. Pope C, Mays N. Reaching the parts other methods cannot reach: an introduction to qualitative methods in health and health services research. BMJ. 1995;311:42-5.

41. Rogers EM. Diffusion of innovations. 5th ed. New York: Free Press; 2003.

42. Rubin HJ, Rubin I. Qualitative interviewing: The art of hearing data. Thousand Oaks, CA: Sage Publications; 2005.

43. Green J, Thorogood N. Qualitative Methods for Health Research. 3 ed. London: Sage; 2014.

44. Patton MQ. Utilization-focused evaluation. 4th ed. New York: Guilford; 2008.

45. Johnson K, Greenseid LO, Toal SA, King JA, Lawrenz F, Volkov B. Research on Evaluation Use: A Review of the Empirical Literature From 1986 to 2005. American Journal of Evaluation. 2009;30(3):377-410.

46. Mayberry RM, Daniels P, Akintobi TH, Yancey EM, Berry J, Clark N. Community-based organizations' capacity to plan, implement, and evaluate success. J Community Health. 2008;33(5):285-92.

47. Mayberry RM, Daniels P, Yancey EM, Akintobi TH, Berry J, Clark N, et al. Enhancing community-based organizations' capacity for HIV/AIDS education and prevention. Evaluation and program planning. 2009;32(3):213-20.

48. Michie S, Johnston M, Abraham C, Lawton R, Parker D, Walker A, et al. Making psychological theory useful for implementing evidence based practice: a consensus approach. Quality & safety in health care. 2005;14(1):26-33.

49. Läubli Loud M, Mayne J, editors. Enhancing Evaluation use. Insights from internal evaluation units. Thousand Oaks, CA, USA: Sage Publications; 2013.

Chapter 7

Barriers to and Facilitators of the Evaluation of Integrated Community-Wide Overweight Intervention Approaches: A Qualitative Case Study in Two Dutch Municipalities

Marije van Koperen

Anja de Kruif

Lisa van Antwerpen

Anna-Marie Hendriks

Jaap Seidell

Jantine Schuit

Carry Renders

Int. J. Environ. Res. Public Health 2016, 13, 390

ABSTRACT

Background

To prevent overweight and obesity the implementation of an integrated community-wide intervention approach (ICIA) is often advocated. Evaluation can enhance implementation of such an approach and demonstrate the extent of effectiveness. To be able to support professionals in the evaluation of ICIAs we studied barriers to and facilitators of ICIA evaluation.

Methods

In this study ten professionals of two Dutch municipalities involved in the evaluation of an ICIA participated. We conducted semi-structured interviews (n = 12), observed programme meetings (n = 4) and carried out document analysis. Data were analysed using a thematic content approach.

Findings

We learned that evaluation is hampered when it is perceived as unfeasible due to limited time and budget, a lack of evaluation knowledge or a negative evaluation attitude. Other barriers are a poor understanding of the evaluation process and its added value to optimizing the programme. Sufficient communication between involved professionals on evaluation can facilitate evaluation, as does support for evaluation of ICIAs together with stakeholders at a strategic and tactical level.

Conclusion

To stimulate the evaluation of ICIAs, we recommend supporting professionals in securing evaluation resources, providing tailored training and tools to enhance evaluation competences and stimulating strategic communication on evaluation.

INTRODUCTION

Childhood obesity is a global public health problem (1, 2). In 2013, 23.8% of the boys and 22.6% of the girls in developed countries were affected by overweight or obesity and in developing countries these percentages were 12.9% and 13.4% respectively (3). Although the increase in the prevalence of childhood obesity appears to be levelling off in some countries (4, 5), in most countries the increase continues (6). Obesity is associated with an increased risk of serious complications such as type 2 diabetes and cardiovascular diseases but also with psychosocial problems and a reduced quality of life (7, 8). Moreover, childhood obesity often persists into adulthood (9, 10).

Governments and communities worldwide try to prevent obesity, starting in childhood or even before birth (11). Traditionally, such prevention approaches focused on individual health determinants such as the motivation of children to be physically active on a daily basis, or the lack of knowledge about healthy eating (12). Unfortunately, these individually targeted prevention efforts showed disappointing outcomes (13, 14). This seemed related to the fact that these individual determinants of overweight and obesity were targeted, while the social and physical environment in which children grow up remained the same and therefore did not stimulate a healthier lifestyle (15). Experts are now advocating the implementation of an integrated community-wide intervention approach (ICIA), in which both personal as well as environmental determinants are targeted. Such an approach should include a mix of interventions working in conjunction with each other in the settings where children live, learn, and play (early care and education, home, school, community, health care), should be directed towards multiple target groups in the community, and should share a long-term health related goal. Subsequently, it should be implemented by sectors within and outside the health domain (16-20).

A successful example of an ICIA is the EPODE approach (EPODE stands for “Ensemble Prévenons l’Obésité Des Enfants” or “Together Let’s Prevent Childhood Obesity”), which was implemented in 15 countries including the Netherlands, where it was named “Youth on Healthy Weight” (In Dutch: “Jongeren op Gezond Gewicht” or the JOGG-approach) (21-24). The strength of this originally French approach lies in five critical elements: (1) broad political commitment (*i.e.*, from health and non-health sectors) and integrated (public health) policies; (2) commitment of and collaboration between public and private stakeholders; (3) use of social

marketing techniques in intervention design; (4) scientific evaluation and (5) integrated pathways of prevention and care. Between 2009 and 2014, 75 municipalities adopted this approach in the Netherlands, and this number continues to rise. To assist local professionals involved in the JOGG-approach with designing, implementing, evaluating and the advocacy of the approach towards stakeholders a logic model was developed, based upon the EPODE logic model (25) (Figure 1). Other instruments offered by the National Coordination Office of the JOGG-approach (JOGG-office) to support professionals in the evaluation of their ICIA were (1) an evaluation training for programme managers and epidemiologists; (2) an evaluation manual including multiple instruments and tools to support the evaluation process and data collection and (3) the possibility of involving an evaluation expert.

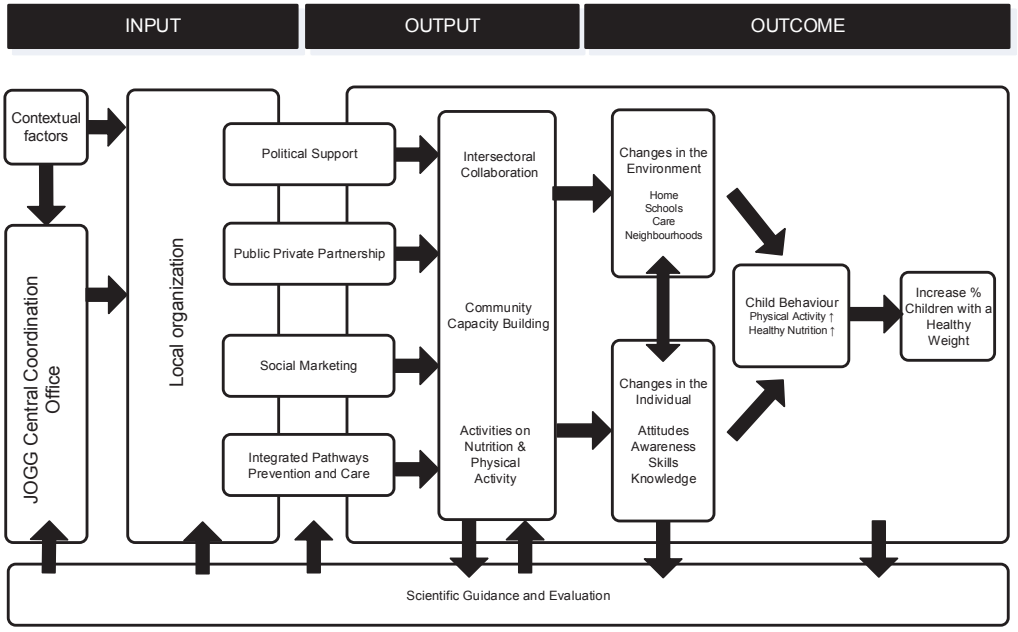


Figure 1: JOGG model

Unfortunately, early experiences with the JOGG-approach show that the critical element "scientific evaluation" is often neglected within the JOGG-approaches in municipalities, despite the fact that evaluation is recognized as being important in continuously improving the ICIA and in achieving a sustainable and more effective programme (26, 27). Evaluation in the context of

an ICIA is broader than simply a systematic assessment of the worth or merit of something. It is "the systematic acquisition and assessment of information to provide useful feedback about some object" (28). Hence, it relates to the total process of formative and summative evaluation, which already commences when an intervention is initiated and can be used to improve the intervention during its course. In ICIAs an evaluation process takes place within a political and organizational context, it requires group skills and capacities, management ability, political leverage and sensitivity to the needs of multiple stakeholders. Evaluation is therefore different from research which is grounded in experimental methods and whose goal it is to create new scientific knowledge. A classical way to describe this difference between evaluation and research is given by Patton: "research seeks to prove, evaluation seeks to improve…" (29).

Previous studies suggest that a possible barrier to the evaluation of complex community-wide approaches is the difficulty in selecting an appropriate design and methodology for evaluation (30-33). Other studies indicate that the evaluation of these initiatives is hampered because evaluation is perceived differently by the various stakeholders involved (34, 35) and performing such an evaluation needs to compete with other priorities for scarce available resources (e.g., time, budget) (25, 36, 37). A limited number of studies have explored barriers to and facilitators of evaluation. However, to the best of the authors' knowledge no studies have involved professionals engaged in an ongoing ICIA (38-40).

In order to improve support to those implementing ICIAs across cases, in-depth understanding about barriers to and facilitators of evaluation of ICIAs is needed. This understanding can then improve planning and execution of evaluation of these comprehensive approaches and hence may inform public policy and practice on optimization of the use of ICIAs. Therefore, we explored the perceptions of professionals involved in an ICIA with regards to barriers to and facilitators of the evaluation of an ongoing ICIA.

METHODS

Study design

A qualitative case study design was used to collect data in two Dutch municipalities (our cases) that implemented the JOGG-approach. Since our goal was to explore a wide range of barriers and facilitators we chose to combine semi-structured interviews with observations and a document analysis among a heterogeneous sample of municipalities. This design supports

the explorative nature of this study (41). The proposal was submitted to the medical ethical committee of the VU medical centre, which judged that a waiver of medical ethical approval was applicable for this explorative study on perceptions of professionals about evaluation of ICIAs.

Sampling

To recruit our two cases, we emailed a study participation request to six eligible municipalities that had implemented the JOGG-approach in February 2014. Inclusion criteria were: one large and one small municipality; with preferably different initiators of the JOGG-approach, which began implementation at least two years ago; affiliation with different Regional Public Health Services (RPHS); and no participation in another external research programme. Based on these criteria, we selected two municipalities (hereafter called Case A and Case B).

From the two cases, we used emergent sampling to select a heterogeneous group of respondents based on position (e.g., programme managers, RPHS epidemiologists, representatives, policy advisors) and degree of involvement within the JOGG-approach (e.g., involved in daily operations, operating at strategic or at tactical level). Emergent sampling implies that our study population emerged and unfolded while the study progressed, rather than being constructed prior to the study. We started with purposive sampling for initial response and because it requires the knowledge of insiders to locate respondents for the study we used snowball sampling to identify other respondents. Snowball sampling means that we asked the first purposively sampled respondents for additional relevant contacts who would be able to provide different or confirming perspectives (42, 43). All respondents employed by the municipality were from the Department of Health.

In Case A, no prior ICIAs had been undertaken to prevent children getting affected by overweight and obesity. A multinational corporation that headquartered in the municipality initiated the JOGG-approach by convincing the municipality to implement the JOGG-approach. Case A was a medium sized urban municipality in the Netherlands of approximately 25,000 inhabitants. The JOGG-approach was implemented in the whole municipality. In Case B the municipality initiated the implementation of the JOGG-approach as a follow-up to an existing integrated approach to the prevention of lifestyle problems, including overweight. Case B was a somewhat larger urban municipality in the Netherlands with approximately 55,500

inhabitants. In this municipality, a community approach was chosen in which two neighbourhoods were involved of approximately 7400 people in total. In contrast to Case A, no other municipality that had implemented the JOGG-approach was affiliated with the RPHS in Case B.

Data Collection

Interviews

Interviews were conducted with five respondents in each case (LvA). Respondents had positions within the municipality and within the RPHS at strategic (or administrative), tactical (or managerial), and operational (or executive) level. The duration of the interviews ranged from 43 min to 67 min. As presented in Table 1, the total amount of hours available for the JOGG-approach was higher in Case B than Case A, respectively 33.20 h and 10.45 h a week.

Table 1: Individual characteristics of the respondents (n = 10)

Respondent*	Function	Gender	Age (years)	Level of education	Organization	Years of service	Working time for JOGG (h/w)**
A1	Programme manager	F	23	BS	Municipality	2	8.00
A2	Policy advisor	F	28	MS	RPHS	2	1.25
A3	Epidemiologist	F	43	PhD	RPHS	4	0.24
A4	Health promotion professional	F	27	MS	RPHS	4	0.96
A5	Alderman	M	62	-	Municipality	4	-
B1	Programme manager	F	48	BS	Municipality & RPHS	2 & 13	20.00
B2	Policy advisor	F	55	MS	Municipality	14	8.00
B3	Epidemiologist	F	38	MS	RPHS	12	4.00
B4	Epidemiologist & Policy advisor (RPHS-employee)	F	37	MS	RPHS	11	1.20
B5	Alderman	M	55	-	Municipality	4	-

* = Letter A represents Case A, letter B represents Case B; ** = Calculated on the basis of 208 workable days (40-hour working week). Abbreviations used: BS = Bachelor of Science, MS = Master of Science, PhD = Doctor of Philosophy, RPHS = Regional Public Health Service.

Furthermore, the programme manager and policy advisor for Case B were on average ten years older than the ones for Case A. Respondent four of Case A is indicated as “Health Promotion Professional” and respondent four of Case B is indicated as “RPHS-employee” (see

Table 1). Prior to the interview, all respondents signed an informed consent. Interviews were conducted with a topic list. This topic list was based on literature and the model of Preskill and Boyle (44). Additionally, three researchers (LvA; AdK; MvK) developed the topic list collaboratively and carried out a pilot test. The topic list evolved over time as the interview process continued. Topics focused on the role of a respondent in evaluation, evaluation competence (knowledge, skills, and attitude), perception of the progress of evaluation, resources for evaluation, organizational structure of the municipality, key persons in evaluation, and perceived collaboration.

Firstly, programme managers and policy advisors of Case A and Case B were interviewed. In Case A, LvA also attended an introductory meeting at tactical level with a new account manager employed by the JOGG-office. During this meeting the account manager asked questions of the program manager and policy advisor to outline the current situation of the JOGG-approach in the municipality. The responses from the interviews from Case A were supplemented with shared information. Insight was gained into organisational structure and the status of the JOGG-approach in the municipalities. Based on the results of the first four interviews, complementary interviews were performed with other stakeholders at Case A and Case B. As the interview process progressed, the programme managers were interviewed again to further elaborate on the evaluation of activities and responsibility for evaluation. After each interview, LvA wrote a report to record the first impressions and a brief description of the respondent and interview location, the course of the interview, summary, and key words. The recordings were transcribed verbatim. Respondents received a summary of the interview in order to check the credibility of the findings (member check) (45).

Observations

Observations were conducted during meetings at strategic programme level (e.g., steering committee) and operational programme level (e.g., working groups) of both the JOGG-approaches. In Case A, the researcher (LvA) conducted an observation at operational project level. In Case B two observations were conducted at the strategic project level and one at the operational project level. Notes regarding the setting, actions, mutual power relationships, mode of interaction, content, decision-making, and non-verbal cues of all stakeholders were made, and the extent to which stakeholders participated during the meetings. Afterwards, LvA continued informal discussions with stakeholders where possible (e.g., during a car ride). In this

way, she was able to strengthen the relationships she had established in earlier interviews and was able to ask questions in a more informal way. After each day of observation, LvA made comprehensive field notes of her observations and informal discussions. These detailed notes generated insight and better understanding of the data collected during the interviews.

Documents

All interviewed respondents were asked to share documents outlining the project structure and current situation of the (evaluation of the) JOGG-approach and documents containing information about the embedding of the JOGG-approach in politics. A variety of documents were reviewed in each case: programme plans, minutes of meetings (at strategic and operational level), overviews of resolutions of the Municipal Board, Memorandums of Public Health, newsletters, and organization charts. The information extracted from the documentation was used in two ways: (1) as input for interviews or to highlight situations that needed to be observed; and (2) to cross-validate data gathered during the interviews and observations (46).

Data Analysis

Concepts from the multi-disciplinary model of evaluation capacity building (ECB) of Preskill and Boyle (44) were used in the development of the coding scheme and discussed within the research team (LvA, AdK, MvK). Although our research does not focus on ECB itself, exploring the barriers to and facilitators of performing evaluation may increase insight into what is needed to build evaluation capacity among professionals in ICIAs. This conceptual framework suggests multiple individual and organizational resources that should be in place in order to build local evaluation capacity and establish a sustainable evaluation practice (44). When these resources are not in place a sustainable evaluation practice is not feasible.

The interview transcripts and observations were analysed by two researchers (LvA, AdK) using thematic content analysis (47). The transcripts were read through several times. The texts were divided into fragments, and codes (labels) were assigned to these fragments (open coding). These codes were all organized into a mind map. The summaries, mind map with codes and preliminary conclusions were thoroughly discussed with MvK. The last phase of the analysis was selective coding: the essence of what each theme was about was identified, searched for relations through constant comparison across cases and analysed variation within and between

cases. Finally, the different themes were fitted into the broader picture of the entire data. During the entire analytical process, memos were used to record thoughts about the results and to distinguish between the researchers' interpretations and respondents' own views. To ensure validity and reliability thoughts and analysis were discussed within the research team.

RESULTS

Case Description

Both cases had adopted the JOGG-approach in the same year, 2012, but with different initiators and point of departure. In Case A, a multinational corporation that headquartered in the municipality brought the JOGG-approach to the attention of the alderman, who in turn supported the implementation in order to maintain a good relationship with this private company. No preparations had been undertaken prior to the JOGG-approach: the municipality started from scratch, as reflected by the programme manager's perception of her function:

> "*Sometimes (I have) the feeling of: 'where to start?' and (it feels like) droplets in the ocean*" (A1).

In Case B, the initiator of the JOGG-approach was the municipality. A programme similar to the JOGG-approach, called programme X in this study, had already been implemented. Programme X was an integrated approach to the prevention of lifestyle problems, including overweight, and was accompanied by financial and substantive support. Therefore, a certain knowledge and experience base was already established. According to the programme manager the JOGG-approach was used to amplify the previous programme.

In both cases a steering group and multiple working groups were established. At strategic level both JOGG-approaches were coordinated by an alderman and the department head of the health sector of the municipality. In both cases a "steering group" functioned more on the operational level than on the strategic level. A respondent from Case A described the steering group as having a lack of:

> *"… real vision, policy, and making decisions (at strategic level)"* (A1).

More people were part of the project structure in Case B than in Case A. For example in Case A eight people were part of the working group "Interventions" and in Case B there were twelve.

The steering group of Case A had seven members and in Case B eleven. Case A focused its programme structure around “Interventions” and “Communication”. And Case B focussed its programme structure around “Interventions”, “Care and prevention”, and “Evaluation”.

The interviewed professionals in Case A were younger and had not been in the employment of their organisations for as long as those in Case B and were less experienced with evaluating public health initiatives. Moreover, working time (hours) for the JOGG-approach was higher in Case B and in this case more professionals from in and outside the local government and at different levels (strategic, tactical and operational) were involved.

In both cases, no evaluation team was established even though this was recommended in the JOGG evaluation manual and in the first (of four) evaluation training session of the JOGG-office. The programme manager and the epidemiologist in both cases attended this first training session. The programme manager of Case B explained they did not establish a separate evaluation team, but made evaluation part of existing working groups. It appears this was a non-formalised agreement since all respondents of Case B were involved in evaluation and had their own strategic and operational tasks and roles. The programme manager of Case A said they doubted the need for such a team, said a clear mandate for such a team had not been given by the steering group, and there were no resources for evaluation.

Evaluation Barriers and Facilitators

In the upcoming paragraphs we describe our merged results from Case A and Case B. Perceived barriers to and facilitators of evaluation in each case are presented using direct quotations from interviews (indicated by *italic* letters and enclosed in quotation marks), field notes, observations, and documents (enclosed in ‘quotation’ marks). A total of six themes derived as key-issues after data-collection: motivating factors to evaluate, perceived feasibility of evaluation, knowledge and attitudes of evaluation, communication and involvement with evaluation, evaluation resources, and support from decision-makers. An overview of the results can be found in table 2.

Motivating factors to evaluate

Analysis of data showed that a trigger or motivating reason could give rise to an evaluation (Case B). On the other hand, the lack of it could impede evaluation (Case A). All interviewees

asked said a specific person was needed to motivate evaluation. In particular the programme manager was seen as having an ideal position to mobilise and motivate professionals:

> *"The programme manager is an enthusiastic person who can transfer her energy properly. So that works very well"* (B4).

The programme manager mentioned (Case B) also seemed to understand her role to trigger evaluation processes since she asked for evaluation-related activities*:*

> *"My role (as programme manager) is to question (..) them (the stakeholders) about the benefit of their activities. So in that way we try to collect data (about evaluation)"* (B1).

In Case B, the alderman also provided such a trigger by asking for an effect evaluation. Moreover, the programme manager and policy advisor in Case B said an external public funder of programme X provided an additional trigger by requesting a process evaluation in a final report for accountability reasons. Also the evaluation expert who was made available to municipalities by the JOGG-office was a catalyst in the design and execution of evaluation and helped others to understand the evaluation process.

> *"(…) it was good to have the evaluation expert from the JOGG-office visit us and discuss the evaluation possibilities and effects to be shown at local level (…), this works better than the training sessions alone, which are more general"* (B1).

However, this programme manager would have liked more directives on evaluation from the JOGG-office. In contrast, interviewees in Case A said no-one triggered evaluation.

To stimulate evaluation, the policy advisor and health promotion professional from Case A therefore suggested that an epidemiologist from the RPHS, the JOGG-office, a programme manager or the alderman should ask for evaluation. The evaluation training sessions were not perceived as stimulating the programme manager of Case A to commence evaluation planning:

> *"(…) the training sessions were too formal, extensive, detail oriented and exaggerated"* (A1).

The given information was too overwhelming for her and did not increase her motivation to study the process of evaluation let alone stimulate her to design and perform the evaluation of the JOGG-approach.

Perceived feasibility of evaluation

Interviewees in both cases perceived evaluation of the JOGG-approach as unfeasible. They assumed that a sound and proper evaluation could not be performed with their limited budget, time and capabilities. For example, the programme manager of Case A and policy advisor of Case B said:

> *"There is so much to it (evaluation) if you want to do it well. A lot of time, money (..), and expertise"* (A1).

> *"If you want to do it (evaluation) properly, you have to make a big investment"* (B2).

Table 2: Barriers to and facilitators of the evaluation of the JOGG-approach

Themes	Subthemes	Barriers (–)/ Facilitators (+)	Examples
The need for an evaluation motive			
Motivating factors to evaluate	Person to motivate evaluation	+	An evaluation expert who provides expertise and support to start the evaluation process
		–	Lack of a person who stimulates performance of evaluation
	Demand for evaluation	+	External funder or alderman to ask for evaluation results
		–	The programme manager does not give a command to start the evaluation process
Evaluation feasibility			
Perceived feasibility of evaluation	Assumptions on feasibility of evaluation	+	Existence of a realistic perception of evaluation
		–	Negative perceptions on feasibility of evaluation as presented in theory and evaluation models
	Capabilities of those involved	+	Trust in interpretation of tasks
		–	Lack of trust in capabilities of those that should be involved in the evaluation: programme manager and epidemiologist.
Knowledge and attitudes on evaluation	Positive attitude towards evaluation	+	Evaluation is regarded as important
		–	Doubt about possibilities to show effects of ICIA
	Knowledge on evaluation	+	Availability of a person with sufficient knowledge on what the (process of) programme evaluation implies and how to conduct such an evaluation
		–	Lack of evaluation knowledge (*i.e.*, oral informal process evaluation has no scientific value)
	Perception of own capabilities	+	High self-efficacy to conduct evaluation
		–	Negative perception of one's own capabilities to evaluate

Table 2: Continued

Themes	Subthemes	Barriers (–)/ Facilitators (+)	Examples
		Evaluation feasibility	
Evaluation resources	Financial resources	+	Allocated financial resources for evaluation process
		–	Limited resources to hire personnel, resulting in limited time
	Time	+	Allocated hours for involvement of epidemiologist or evaluation expert
		–	Lack of personnel for data collection; Lack of time for evaluation education
	Availability of evaluation instruments	+	Availability of generic suitable evaluation instruments (*i.e.*, questionnaires, logic model)
		–	Non-functioning or incomplete evaluation instruments
		Commitment of evaluation stakeholders	
Communication and involvement with evaluation	Communication on evaluation	+	Regular and high degree of communication between programme manager and epidemiologist on evaluation
		–	Low degree of communication on evaluation between programme manager and epidemiologist; Low degree of communication between programme manager and alderman
	Involvement in evaluation	+	Active involvement of stakeholders helps to see the added value of evaluation
		–	Involvement of members of the programme structure at strategic as well as tactical and operational level
Support form decision-makers at multiple levels	Political support (tactical)	+	Evaluation is considered important by alderman and city council
		–	Competing themes that reduce attention and make fewer resources available; Politicians only interested in long-term goals and not in mid-term or process evaluations
	Managerial support (strategic)	+	A pro-active attitude of department management to generate resources and support; a clear policy vision of RPHS supportive to the approach and evaluation
		–	A time consuming policy process to generate extra financial resources
	Support from implementers (operational)	+	Stakeholders have a common goal
		–	Limited interest in evaluation from those who implement the ICIA

Most interviewees added that the evaluation as presented in the evaluation training and in the evaluation manual of the JOGG-office represented an "ideal" evaluation which was not encountered in practice or was even incompatible with practice. Some interviewees struggled with the translation of the evaluation manual for use in their own situation. Both the epidemiologist and the RPHS-employee of Case B explained that evaluation of the JOGG-approach was not systematic, but "emerged" during implementation:

"I do notice that practice is more stubborn (than the ideal situation), so then you'll have to look further and search for your own pathway" (B3).

"You want to write things down as specifically as possible in such an (evaluation) plan. However, JOGG is also characterized by (..) a bottom-up approach and setting goals together. And sometimes I perceive that as quite a tension" (B4).

Knowledge of and attitudes to evaluation

In both cases the programme managers indicated they lacked sufficient knowledge of evaluation. The epidemiologists were believed to be sufficiently equipped to design and perform evaluation. However, the policy advisor in Case A said that some epidemiologists who were believed to be capable of designing and conducting an evaluation were in reality not able to do so. This might be explained by the fact that most interviewees, including the epidemiologists, did not understand the difference between evaluation and research, they used the terms interchangeably, hence making evaluation bigger and more difficult than necessary. For instance, the programme manager and policy advisor of Case A frequently used the terms evaluation and research interchangeably and referred to the working group "Research" when the interviewer asked about evaluation. Asking about her competences in evaluation, the programme manager of Case A replied:

"I did some research during my study but not like a youth monitor or something. I would not know what questions to ask or when such a research is representative or reliable (…)" (A1).

Moreover, interviewees in Case A did not perceive a process evaluation in the form of an oral communication of an activity to discuss the progress and possible areas of improvement, as part of the programme evaluation, because it was not formal enough. In Case B, the programme manager, epidemiologist, and RPHS-employee knew that process evaluation was important to optimize the approach, but their attitudes to the process evaluation were less positive:

"it has no scientific value" (B2) *and "it is not something official"* (B4).

The epidemiologist felt that she and the other professionals were not fully equipped to conduct a process evaluation. Additionally, the programme manager and RPHS-employee of Case B

showed they were aware of differences in evaluation between different initiatives, they said evaluation could either be extensive or superficial depending on needs and funding.

In contrast to the different purposes of evaluation and research as discussed in the introduction to this paper the programme manager, policy advisor, and health promotion professional of Case A all mentioned that evaluation findings could be used to "prove" something. These perceptions on evaluation can limit the use of evaluation for programme optimization and diminish the value of evaluation at strategic and tactical levels.

Regarding respondents' attitudes towards evaluation, some respondents questioned whether the effects observed could be allocated to the JOGG-approach. The policy advisor and epidemiologist of Case B, for example, explained it would be difficult to produce "hard" data about the relationship between the JOGG-approach and effects. Furthermore, several respondents cited that evaluation required a lot of investment of resources. One respondent commented:

> *"And it is the question whether it (the evaluation) is worth the investment"* (B2).

Evaluation in general was considered important by the majority of the respondents:

> *"When you evaluate, you know what works and what does not (..). And you can keep partners on board, show results, (create) a positive atmosphere, and attract other parties"* (A1).
>
> *"It is important to see whether what you do achieves effects"* (B2).

Evaluation resources

Data revealed that lack of time and allocated financial resources prohibits the evaluation of the JOGG-approach (Case A). On multiple occasions the programme manager of Case A stated that limited financial resources were available to administer questionnaires, to hire personnel for data collection and analysis, and to set up a proper evaluation. In this municipality a budget for evaluation of the JOGG-approach was not generated. Since the RPHS monitors health and behaviour of children in the municipality it was decided to use this data to show results, despite the limitations of this data. In Case B, on the other hand, allocated time and financial resources were believed to have stimulated the evaluation process:

"Within the entire process we have allocated time and money in order to conduct a proper evaluation" (B2).

Interviewees in Case A reported that the annual fee of the JOGG-approach was paid by the multinational headquartered in the municipality, while in Case B, the annual fee was funded by the subsidy for programme X and reserved resources from local health policy. Concerning time (personnel resources), hours were allocated for an epidemiologist in Case B, whereas no additional hours for evaluation were made available in Case A. The programme manager of Case A believed evaluation could be stimulated by the involvement of someone with substantive knowledge of research who could lead the workgroup Research. Regarding material resources, the JOGG-office provided various materials to support evaluation: an evaluation manual, the JOGG-model, process guidelines, an activity monitor (a digital monitor to register all activities), and a parental questionnaire on children's health and behaviour. Although the parental questionnaire was used in both cases, the remaining materials were not (frequently) used by the respondents. The programme managers and epidemiologists described some issues that discouraged them from using the activity monitor:

"The development process of the activity monitor by the JOGG-office took a long time and it still is not finalized" (B3),

"It is not really a useful tool" (B1;A1).

"The activity-monitor has limitations in space to insert all retrieved data" (B3).

and

"(…) other JOGG-municipalities do not use it" (A3).

"It is not easy to use and needs an update in lay-out" (A3).

Communication and involvement with evaluation

Communication was considered key in the evaluation of an ICIA. When there is no communication on evaluation professionals seem less committed to the evaluation process. Communication between the programme manager and epidemiologist was facilitative for evaluation, since it enhanced the involvement of both in the evaluation (see Figures 2 and 3):

"If you are really involved then it is easier to see where evaluation can do something or add something" (A3).

In Case A, the programme manager and epidemiologist admitted that they communicated very little, whereas a high degree of communication took place in Case B. In the programme plan of Case B, it was stated that the programme manager had to be the one that connected the municipality and the RPHS. She should communicate with all members of the programme structure, at strategic, tactical and operational levels, inside and outside the municipality structure:

> *"The programme manager acts as a spider in the web, both inside and outside the municipality"* (text fragment drawn from action plan).

Support from decision makers

Support from decision makers at multiple levels was important for evaluation since it affected the availability of resources. One epidemiologist explained:

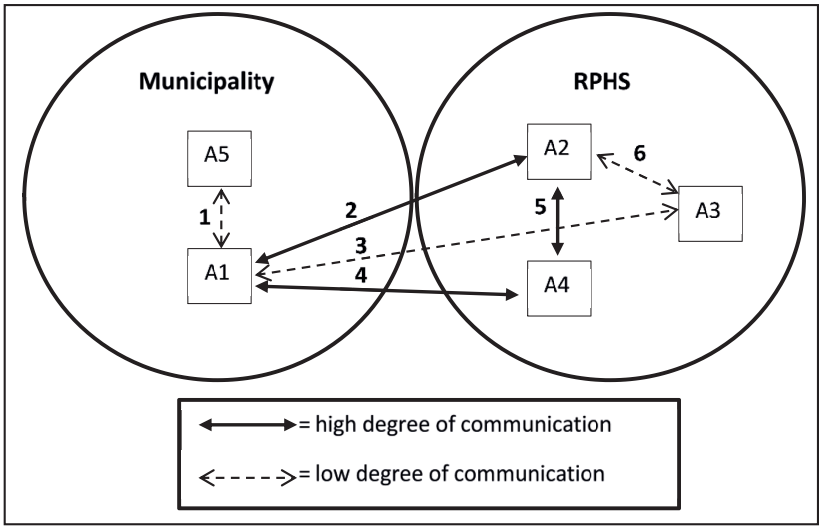
> *"One cannot do everything, it is really quite broad. So at a certain point, choices need to be made"* (B3).

Decision makers who were best able to create a support-base for the JOGG-approach were situated at tactical and operational levels inside and outside the municipality. Alderman and city council members were especially important in stimulating the allocation of evaluation resources.

In both cases competing priorities amongst politicians and policy makers could reduce attention for the JOGG-approach and subsequently resulted in fewer resources being available for evaluation. Although the approach itself was supported by politicians and other policy makers in Case B, the policy advisor and epidemiologist of Case B cited that evaluation was not always considered important by politicians, although:

> *"Sometimes they do think (evaluation) is important and then they say: 'make money available'. So, that is always a little between the devil and the deep blue sea"* (B2).

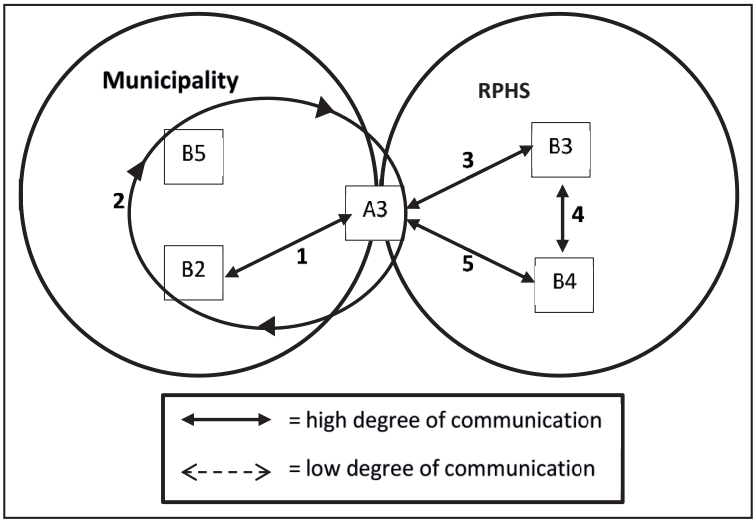
To create political support, the programme manager, policy advisor, and alderman of Case B reported that they linked the JOGG-approach to the Social Support Act and drew up a collective policy plan. This was conducive to cooperation with other policy sectors according to the policy advisor.



Explanation of communication lines between stakeholders (see associated numbers in above figure):

1. Programme manager (A1) and alderman (A5): Low degree of communication.
   The alderman mentioned that he had a lot of confidence in the programme manager. The programme manager perceived no guidance from him: "*He leaves everything to me. On the one hand, it is pleasant, but on the other hand I miss guidance"* [A1]. It seemed that the alderman was not well informed about the present state of the JOGG-approach as shown in this field note: "*During the interview he often flipped through papers to search for something*". The following quote confirms this: "*Let me see, what more do we have? Let me see what the research has done further…*" [A5].
2. Programme manager (A1) and policy advisor (A2): High degree of communication.
   The policy advisor was the most active partner in the perception of the programme manager, however: "*I don't involve her all the time, because that takes a lot of time*" [A1].
3. Programme manager (A1) and epidemiologist (A3): Low degree of communication.
   They were both aware of present degree of communication, however, it appeared that they do not communicate at the moment: "*It is a bit quiet, in recent times*" [A3] and "*I'm not really involved in what is happening*" [A3]. A1 explicates the need for an expert to measure achieved results but does not come up with the name of A3.
4. Programme manager (A1) and Health Promotion Professional (A4): Average degree of communication. They reported that they inform each other and made agreements. As the health promotion professional put it: "*I usually have contact with her when I do things for JOGG*" [A4].
5. Policy advisor (A2) and Health Promotion Professional (A4): High degree of communication.
   They seemed to have good contact with each other. The following field note is an example of this: "*They make jokes and laugh with each other. It seems that they are friends*". Furthermore, the health promotion professional mentioned that: "*We are colleagues, so in between we can always have a little discussion with each other*" [A4].
6. Policy advisor (A2) and epidemiologist (A3): Low degree of communication.
   Similar to communication line 3, it seemed that they did not use their communication line: "*We have a policy advisor at this RPHS. So, occasionally I hear something from her or I might be kept informed [..]. But we do not have a specific consultation moment [for this municipality]*" [A3].

Figure 2: Communication flow of Case A



Explanation of communication lines between stakeholders (see associated numbers in above figure):

1. Programme manager (B1) and policy advisor (B2): Very high degree of communication. They both perceived their relationship like a "job share": "*We can almost guess what the other is thinking*" [B2].
2. Programme manager (B1), policy advisor (B2), and alderman (B5): High degree of communication. Together with the department head community affairs, they had a monthly consultation to monitor the progress of the JOGG-approach. The alderman cited that he gave them a lot of freedom and worked on the basis of trust: "*You provide guidance as a director by giving trust*" [B5]. The programme manager and policy advisor informed the alderman in an informal way. According to the alderman that was called 'accountability', however, he did not perceive it like that.
3. Programme manager (B1) and epidemiologist (B3): High degree of communication. The programme manager appreciated it to perform the evaluation together with the epidemiologist: "*Because it seems to me very difficult to do it alone as program manager*" [B1]. The program manager kept the epidemiologist well informed about further developments of the JOGG-approach and acted as an intermediary: *"Contact with her is fairly easy since the RPHS is directly connected with the municipality*" [B3].
4. Epidemiologist (B3) and RPHS-employee (B4): High degree of communication. The RPHS-employee reported that she provided support and advice to the epidemiologist. They were colleagues and appeared to have good contact: "*That [contact] goes very properly, it is a one-to-one relationship*" [B3]. Furthermore, the following field note pointed out that: "*The epidemiologist's desk was across from the desk of the RPHS-employee*".
5. Programme manager (B1) and RPHS-employee (B4): High degree of communication. They did not have much consultation regarding evaluation, according to the RPHS-employee. However, for other JOGG-related activities they did have regular consultation and coordination.

Figure 3: Communication flow of Case B

In Case B the JOGG-approach was mentioned several times in the list of resolutions of the Board of Mayor and Aldermen which shows political support. In addition, the programme manager of Case B appeared to be very pro-active, as illustrated by the following field note:

> *"The programme manager went to the financial department on the day it became clear that additional money was needed for a JOGG-approach related activity".*

In Case A the JOGG-approach was not linked to other formalised initiatives in the municipality and the JOGG-approach itself was only referred to a single time in the resolutions of the city council. Support from politicians for evaluation in Case A was considered low by respondents, the epidemiologist of Case A even believes that municipalities in general are only interested in long-term goals and not in mid-term effects or process evaluations.

The administrative and policy process to generate extra funding for the evaluation for the JOGG-approach would, according to the programme manager, absorb all personnel hours:

> *"If you really need money, then you can (write) entire plans and (go) to the Municipal Council. However, then my eight hours a week (for the JOGG-program) are lost due to that"* (A1).

Besides support from policymakers, obtaining support for the evaluation from those who implement the JOGG-approach was considered key to evaluation. However, in both cases obtaining such support was often limited due to different interests, backgrounds, identities, cultures, and origin of implementers. Therefore, having a common goal was seen as facilitative for evaluation in Case B. However, in Case A having a common goal did not emerge from the data. In Case B interviewees actively brought evaluation to the attention of stakeholders, while this did not happen in Case A:

> *"We have actually never discussed evaluation (in the working group Interventions)"* (A4).

The RPHS-employee in Case B added that evaluation was not a natural step for stakeholders and not many stakeholders asked for it. To overcome this barrier, the RPHS-employee explained that the importance of evaluation could be made clearer to them. However, the programme manager of Case A did not have the intention to invest in such a process:

> "*I'm not going to make a whole action plan to create a support base for research among politicians and private partners. Then it is better to invest my energy in*

> *performing those activities and setting up and organizing working group meetings. Because at least something happens then"* (A1).

Besides politicians and implementers, the RPHS was often discussed as important to support evaluation in both cases.

> *"I really liked working with the RPHS epidemiologist (…). I think that this is also an advice to other municipalities, ensure that employable hours are made available within the RPHS or for another researcher who can work with you"* (B1).

However, in Case A this imposed a barrier since the budget for the evaluation of the JOGG-approach had not been allocated. According to the policy advisor and epidemiologist it could be possible to increase employable hours of RPHS personnel for the JOGG-approach when it was considered important by the RPHS. Unfortunately, they noted that since the RPHS is a non-profit organisation, support for evaluation would depend on allocation of municipal resources.

> *"Employable hours just cost money, (…) so the RPHS cannot just donate employable hours to the municipality"* (A1).

To overcome this evaluation barrier, the epidemiologist suggested creating a clear policy or vision statement at the RPHS about how important support of the JOGG-approach is and how many hours they would like to invest.

DISCUSSION

In this study we explored the barriers to and facilitators of the evaluation of ICIAs. We believe that these barriers and facilitators can be encapsulated in three themes: the need for an evaluation motive, evaluation feasibility and commitment to evaluation from stakeholders (see Table 2 in result section).

Firstly, the *absence of a clear evaluation motive* can hamper evaluation. Evaluation requires a personal or environmental factor that triggers evaluation. For example, when professionals believe an evaluation has no benefits and people around them (e.g., aldermen) do not provide incentives to evaluate, there is no urge to spend scarce resources on evaluation. Other studies refer to this as the "demand side" of evaluation (48) or "readiness for evaluation" (49). This readiness for evaluation could also be a function of involved professionals with more experience.

Secondly, *perceived feasibility* may hamper evaluation. Two main factors determined feasibility: evaluation skills and opportunities. ICIA evaluation requires continuous realigning of "theory" and "practice" of evaluation since an ICIA emerges during implementation, requires a focus on the process (besides the effect), and is often "bottom-up". Professionals might be capable of conducting a "top-down" evaluation which is planned in a more linear way. However, for ICIA evaluation, professionals need to empower the community (*i.e.*, stakeholders) to evaluate (50, 51) and make adaptations during the evaluation process. Therefore, skills are required that enable the professional to design, plan and conduct both an effect *and* process evaluation and work within an emerging environment. Besides such a broad set of evaluation skills, time and financial resources need to be sufficient to make the evaluation feasible. Lack of time and financial resources are a commonly found evaluation barrier and particularly pervasive when it concerns the evaluation of ICIAs (compared to a less comprehensive evaluation) (25, 37, 40, 52, 53). Professionals therefore need to act as "jugglers": to prioritize evaluation in a context with multiple competing priorities and limited evaluation capacity (48). In order to take upon the roles involved professionals need to be highly experienced in Public Health.

Thirdly, the (lack of) *commitment to evaluation from stakeholders* can hamper evaluation. Such commitment is necessary to enhance the evaluation capacity and is primarily created through communication and trust: *"many of the problems encountered by evaluators, much of the resistance to evaluation, and many failures of use occur because of misunderstandings and communication problems"* [42,44]. Therefore, communication that is specifically focused on building trust and relationships [38] between the programme manager and a person with expertise in evaluation is required. Professionals also need to communicate effectively with the community and decision makers to keep them involved in the evaluation process and to understand the importance of evaluation. Such communications skills are even more important since obtaining evaluation support from decision makers at strategic (politics), tactical (managerial) and at operational level (in municipality and the RPHS) was found to be extremely difficult, but is also an essential element for ICIAs (*i.e.*, "political commitment" and "public private partnership") [23].

Furthermore, in the Netherlands the Regional Public Health Services have long since provided municipalities with epidemiological data on public health. This makes the RPHSs and health sectors of municipalities very outcome driven with public health initiatives with pre and

post-measurements on sickness and health. Within the Dutch Public Health there is no tradition of seeing evaluation as a continuous process that should be aligned with the design and implementation of specific programmes, let alone in comprehensive community-wide interventions approach. Therefore it seems logical that epidemiologists, that are used to show effects (hard, quantitative data) of a public health intervention, indicate they have a lack of trust in their capabilities to use evaluation in emerging practice. However, we do feel that this study showed multiple factors that hamper the very necessary evaluation for ICIAs and therefore we advise strengthening epidemiologists and the managers of these programmes with knowledge and skills in programme evaluation and evaluation support from managerial level and funders to enhance the successes of these comprehensive programmes.

One of the strengths of this study is its design: a case study research is useful in order to gain a rich, detailed understanding of evaluation within a real life context (54). Although we explored two cases the views of the respondents might not be reflective of the perceptions of stakeholders in other JOGG-municipalities. However, we feel the examination of the topic at hand within a real life context increases the reliability and ecological validity of the results (55). In addition, the explorative and qualitative nature of this study can provide a deeper insight into evaluation of the integrated approach compared to a quantitative study. Finally, it appeared afterwards that some stakeholders might not have fully understood the difference between evaluation and research. This may put the perceptions of these respondents in a different perspective. At least the present study provides insight into the existence of this lack of understanding.

Conclusions

Evaluation remains an important component of ICIAs but in practice it is often neglected. Professionals such as programme managers and epidemiologists appear to have no motive to evaluate, and lack knowledge, skills and resources to evaluate an ICIA resulting in poor evaluation feasibility and lack of commitment to evaluation from stakeholders. As such, evaluation capacity is insufficient and needs to be enhanced. This could be achieved by providing an incentive for evaluation, supporting programme managers to generate and allocate sufficient time and financial resources to programme evaluation, communicating to them the difference between evaluation and research, and through teaching or supporting

programme managers and epidemiologists to invest in commitment of stakeholders at multiple levels inside and outside local government.

The incentive for evaluation of an ICIA can be provided by programme funders (*i.e.*, demanding 10%–15% evaluation budget in programme plans) and by central or national programme coordinators (*i.e.*, compulsory training in program evaluation for programme management; the provision of an evaluation coach to stimulate evaluation planning, communication on evaluation and assist in the appointment of a responsible evaluation manager). The incentive can also be part of organizational policy with regard to evaluation within local government and RPHS, or through support from the tactical and strategic level for programme evaluation within these organisations. We also urge central coordinated programmes such as JOGG that are known to persuade and support municipal governments to develop and disseminate local ICIAs to discuss the importance of programme evaluation for the success of the ICIA with municipalities to increase evaluation budget and motives for evaluation of the ICIA beforehand. By investing in commitment from stakeholders and incentives for evaluation, the quantity and quality of evaluation of these comprehensive approaches may improve the design and the implementation of the ICIA, the sustainability of the approach and strengthen the evidence base of effective prevention strategies for childhood obesity.

Further insight is needed to establish a sustainable evaluation practice within organisations involved in designing and implementing ICIAs, and to understand which interventions and policies are here for needed. Future studies should examine different strategies to increase engagement of programme managers, epidemiologists and stakeholders at tactical and strategic level in the programme evaluation of an ICIA.

The ICIA we studied in two municipalities in The Netherlands is based upon the EPODE approach. Although EPODE advocates a community-wide approach to prevent children getting affected by overweight and obesity it is not a one-size-fits-all approach, it still needs to be adapted to the local situation. A programme evaluation can support this adaptation. Due to the specific evaluation culture in the Netherlands we cannot automatically apply the results of this study to other EPODE approaches. We do think that since the EPODE approach is expanding internationally it is important for current and future EPODE approaches but also for other ICIAs, to pay sufficient attention to programme evaluation and its advantages for programme optimization, to evaluation capacity building for programme management and to evaluation funding and evaluation support at tactical and strategic level.

REFERENCES

1. Bleich SN, Segal J, Wu Y, Wilson R, Wang Y. Systematic review of community-based childhood obesity prevention studies. Pediatrics. 2013;132(1):e201-10.
2. Mitchell NS, Catenacci VA, Wyatt HR, Hill JO. Obesity: overview of an epidemic. The Psychiatric clinics of North America. 2011;34(4):717-32.
3. Ng M, Fleming T, Robinson M, Thomson B, Graetz N, Margono C, et al. Global, regional, and national prevalence of overweight and obesity in children and adults during 1980-2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet. 2014.
4. Olds T, Maher C, Zumin S, Peneau S, Lioret S, Castetbon K, et al. Evidence that the prevalence of childhood overweight is plateauing: data from nine countries. Int J Pediatr Obes. 2011;6(5-6):342-60.
5. Rokholm B, Baker JL, Sorensen TI. The levelling off of the obesity epidemic since the year 1999--a review of evidence and perspectives. Obes Rev. 2010;11(12):835-46.
6. Swinburn BA, Sacks G, Hall KD, McPherson K, Finegood DT, Moodie ML, et al. The global obesity pandemic: shaped by global drivers and local environments. Lancet. 2011;378(9793):804-14.
7. Wake M, Clifford SA, Patton GC, Waters E, Williams J, Canterford L, et al. Morbidity patterns among the underweight, overweight and obese between 2 and 18 years: population-based cross-sectional analyses. International journal of obesity (2005). 2013;37(1):86-93.
8. French SA, Story M, Perry CL. Self-esteem and obesity in children and adolescents: a literature review. Obesity research. 1995;3(5):479-90.
9. Daniels SR. The consequences of childhood overweight and obesity. Future Child. 2006;16(1):47-67.
10. Guo SS, Wu W, Chumlea WC, Roche AF. Predicting overweight and obesity in adulthood from body mass index values in childhood and adolescence. The American journal of clinical nutrition. 2002;76(3):653-8.
11. Roberto CA, Swinburn B, Hawkes C, Huang TTK, Costa SA, Ashe M, et al. Patchy progress on obesity prevention: emerging examples, entrenched barriers, and new thinking. The Lancet. 2015.
12. Flynn MA, McNeil DA, Maloff B, Mutasingwa D, Wu M, Ford C, et al. Reducing obesity and related chronic disease risk in children and youth: a synthesis of evidence with 'best practice' recommendations. Obes Rev. 2006;7 Suppl 1:7-66.
13. Huang TT, Glass TA. Transforming research strategies for understanding and preventing obesity. JAMA : the journal of the American Medical Association. 2008;300(15):1811-3.
14. Stice E, Shaw H, Marti CN. A meta-analytic review of obesity prevention programs for children and adolescents: the skinny on interventions that work. Psychological bulletin. 2006;132(5):667-91.

15. Swinburn B, Egger G, Raza F. Dissecting Obesogenic Environments: The Development and Application of a Framework for Identifying and Prioritizing Environmental Interventions for Obesity. Preventive Medicine. 1999;29(6):563-70.

16. Huang T, Drewnowski A, Kumanyika S, Glass T. A systems-oriented multilevel framework for addressing obesity in the 21st century. Prev Chronic Dis. 2009;6(3 A82).

17. Johnston LM, Matteson CL, Finegood DT. Systems Science and Obesity Policy: A Novel Framework for Analyzing and Rethinking Population-Level Planning. Am J Public Health. 2014;104(7):1270–8.

18. Bemelmans W, Verschuuren M, Savelkoul M, Wendel-Vos G. An EU-wide overview of community-based initiatives to reduce childhood obesity. Dutch Institute for Public Health and the Environment (RIVM), Bilthoven. 2011.

19. Dietz WH, Gortmaker SL. Preventing obesity in children and adolescents 1. Annual review of public health. 2001;22(1):337-53.

20. Foltz JL, May AL, Belay B, Nihiser AJ, Dooyema CA, Blanck HM. Population-level intervention strategies and examples for obesity prevention in children. Annual review of nutrition. 2012;32:391-415.

21. Hendriks AM, Gubbels JS, De Vries NK, Seidell JC, Kremers SP, Jansen MW. Interventions to promote an integrated approach to public health problems: an application to childhood obesity. Journal of environmental and public health. 2012;2012:913236.

22. Ministerie VWS. Landelijke nota gezondheidsbeleid: Gezondheid dichtbij (National Health Policy). Rijksoverheid, 2011.

23. Allender S, Nichols M, Foulkes C, Reynolds R, Waters E, King L, et al. The development of a network for community-based obesity prevention: the CO-OPS Collaboration. BMC public health. 2011;11:132.

24. Borys JM, Le Bodo Y, Jebb SA, Seidell JC, Summerbell C, Richard D, et al. EPODE approach for childhood obesity prevention: methods, progress and international development. Obes Rev. 2012;13(4):299-315.

25. Van Koperen TM, Jebb SA, Summerbell CD, Visscher TL, Romon M, Borys JM, et al. Characterizing the EPODE logic model: unravelling the past and informing the future. Obes Rev. 2013;14(2):162-70.

26. van Koperen TM, van der Kleij MJJ, Renders CM, Crone MR, Hendriks AM, Jansen M, et al. Design of CIAO, a research program to support the development of an integrated approach to prevent overweight and obesity in the Netherlands. BMC Obesity. 2014;1(5):1-12.

27. King L, Gill T, Allender S, Swinburn B. Best practice principles for community-based obesity prevention: development, content and application. Obes Rev. 2011;12(5):329-38.

28. Trochim WMK. Introduction to Evaluation 2002 [cited 2015 13-10-2015]. definitions, strategies, types, questions and methods; link to The Planning-Evaluation Cycle and An Evaluation Culture. Based on

book, Research Methods Knowledge Base]. Available from: http://www.socialresearchmethods.net/kb/intreval.htm.

29. Patton MQ. Qualitative evaluation and research methods. 2 ed. Newbury Park, CA: Sage; 1990. 532 p.

30. Atienza AA, King AC. Community-based health intervention trials: an overview of methodological issues. Epidemiol Rev. 2002;24(1):72-9.

31. Summerbell C, Hillier F. Community interventions and initiatives to prevent obesity In: Crawford D, Jeffery RW, Ball K, Brug J, editors. Obesity epidemiology: from aetiology to public health. Oxford: Oxford University Press; 2010. p. 395-408.

32. Sanson-Fisher RW, Bonevski B, Green LW, D'Este C. Limitations of the randomized controlled trial in evaluating population-based health interventions. American journal of preventive medicine. 2007;33(2):155-61.

33. Yin RK, Kaftarian SJ. Introduction: Challenges of community-based program outcome evaluations. Evaluation and Program Planning. 1997;20(3):293-7.

34. Goodman RM. Principals and tools for evaluating community-based prevention and health promotion programs. Journal of public health management and practice : JPHMP. 1998;4(2):37-47.

35. Nastasi BK, Hitchcock J. Challenges of evaluating multilevel interventions. Am J Community Psychol. 2009;43(3-4):360-76.

36. Storm I, Savelkoul M, Busch MCM, Maas J, Schuit AJ. Intersectoraal samenwerken in de aanpak van gezondheidsachterstanden: een onderzoek onder 16 gemeenten in Nederland. Dutch Institute for Public Health and the Environment (RIVM), Bilthoven. 2010.

37. Moore L, Gibbs L. Evaluation of community-based obesity interventions. In: Waters E, Swinburn B, Seidell J, Uauy R, editors. Preventing childhood obesity: evidence policy and practice. Chichester: John Wiley & Sons; 2010. p. 157-66.

38. Napp D, Gibbs D, Jolly D, Westover B, Uhl G. Evaluation barriers and facilitators among community-based HIV prevention programs. AIDS education and prevention : official publication of the International Society for AIDS Education. 2002;14(3 Suppl A):38-48.

39. Huckel Schneider C, Milat A, Moore G. Barriers and facilitators to evaluation of health policies. International Conference on Public Policy; 26-28 june 2013; Grenoble2013. p. 19.

40. Taut SM, Alkin MC. Program staffs perceptions of barriers to evaluation implementation. 2003.

41. Saunders M, Lewis P, Thornhill A. Research methods for business students. Harlow: Pearson Education; 2009. 614 p.

42. Gray DE. Doing research in the real world. Third ed. London: Sage; 2014.

43. Patton MQ. Qualitative evaluation and research methods. 4 ed. Newbury Park, CA: Sage; 2015. 270 p.

44. Preskill H, Boyle S. A multidisciplinary model of evaluation capacity building. American Journal of Evaluation. 2008;29(4):443-59.

45. Holloway I, Wheeler S. Qualitative research in nursing and healthcare. Chichester: John Wiley & Sons; 2013. 368 p.

46. Noor KBM. Case Study: A Strategic Research Methodology. American Journal of Applied Sciences. 2008;5(11).

47. Green J, Thorogood N. Qualitative Methods for Health Research. 3 ed. London: Sage; 2014.

48. Taylor-Powell E, Boyd HH. Evaluation capacity building in complex organizations. In: Braverman MT, Negle M, Arnold ME, Rennekamp RA, editors. Program evaluation in a complex organisational system: Lessons from Cooperative Extension New Directions for Evaluation. 120. 120 ed: Wiley Periodicals, Inc.; 2008. p. 55-69.

49. Patton MQ. Utilization-focused evaluation. 4th ed. New York: Guilford; 2008.

50. Laverack G, Labonte R. A planning framework for community empowerment goals within health promotion. Health policy and planning. 2000;15(3):255-62.

51. Jacobs G. Participatie en empowerment in de gezondheidsbevordering: professionals in de knel tussen ideaal en praktijk? Journal of Social Intervention: Theory and Practice. 2005;14(4):29-39.

52. Robinson KL, Driedger MS, Elliott SJ, Eyles J. Understanding facilitators of and barriers to health promotion practice. Health promotion practice. 2006;7(4):467-76.

53. Bamberger M, Rugh J, Mabry L. Real World Evaluation. Working under Budget, time, data and political constraints. 2nd ed. Thousand Oakes, CA, USA: Sage; 2012. 666 p.

54. Yin RK. Case study research: design and methods. Thousand Oaks: SAGE Publications; 2009. 219 p.

55. Baarda DB, De Goede MPM, Teunissen J. Basisboek kwalitatief onderzoek. Groningen: Stenfert Kroese; 2005. 369 p.

Chapter 8

General discussion

INTRODUCTION

The overall aim of this thesis was to explore the evaluation, and more specifically to explore the evaluation framework, of integrated community-wide intervention approaches (ICIAs) to prevent overweight and obesity in children. Additionally, it aimed to gain an understanding of the barriers to and facilitators of programme evaluation of ICIAs. Based upon this information, we aimed to develop recommendations on how to facilitate programme evaluation of these programmes. Firstly, the main findings of the studies which were conducted will be discussed followed by the methodological strengths and limitations. This paper concludes by reflecting on our findings and our recommendations for practice, policy, education and future research.

SUMMARY OF OUR MAIN FINDINGS

In **Chapter 1**, the general introduction of this thesis, it was established that to prevent overweight and obesity in children integrated community-wide intervention approaches (ICIA) are needed. However, due to the complexity of these approaches evaluating them is a challenge and needs to be better understood. To comprehend the magnitude of the ICIA a logic model is needed to clarify programme components and to understand processes required to decrease the prevalence of children affected with overweight or obesity.

The conception of the EPODE logic model is described in **Chapter 2**. EPODE is a centrally coordinated and locally implemented ICIA to prevent obesity and overweight in children. In order to be successful political commitment is needed as well as the establishment of public and private partnerships. In addition, social marketing strategies support the development of interventions that better meet the needs, wishes and talents of the target group and better suit their environment. To enable community stakeholders to implement effective and sustainable strategies to promote healthier lifestyles and prevent childhood obesity, monitoring and evaluation of the programme and of programme components is a critical component of EPODE too. The central coordination team offers support, training and materials to local implementers. In the overarching EPODE logic model the following elements can be identified: key-elements in planning, organization and implementation divided over four integrated organizational and delivery levels, and the four critical components (as described above, also referred to as 'the EPODE pillars'). The EPODE logic model is an umbrella logic model

and as such can be used as a reference for future and follow-up research on ICIAs preventing overweight and obesity in children; to support future implementation of EPODE in communities; as a tool in the engagement of stakeholders and to guide the construction of a locally tailored evaluation plan for these ICIAs.

In **Chapter 3** we described the design of the CIAO studies. The research consortium CIAO (established in 2010) consists of five Academic Collaborative Centres (ACCs) each of which seeks a better understanding and knowledge of certain key-elements or critical components of the JOGG-approach, a Dutch ICIA to prevent overweight and obesity in children. The CIAO studies addressed the following topics: 1) political commitment, 2) social marketing strategies, 3) parenting styles, 4) adoption and implementation processes and 5) monitoring and evaluation (current thesis). The need for the CIAO studies and the logic model of the JOGG-approach (based upon the EPODE logic model) are presented in this chapter as are the aims, concepts and methods CIAO used. Moreover, the research outline as shared by all five studies is presented and visualised in a concise figure.

In **Chapter 4** an appraisal of existing evaluation frameworks was carried out. This appraisal learned us that none of the available evaluation frameworks fully complied to set literature-based requirements. Most frameworks did not address the most prominent evaluation barriers such as resource allocation, evaluation culture, and organizational change. The Community Toolbox from the Kansas University scored best. This appraisal of existing evaluation frameworks led to the development of the JOGG Evaluation Manual (version 2 is available upon request by author and at www.cuprifere.nl/category/view/nieuws; a short outline of the 6 step approach can be found in Appendix 1 of this thesis). The Evaluation Manual aims to guide programme managers and epidemiologists in the planning and implementation of programme evaluation through the provision of a thorough description of all program evaluation steps, an evaluation planning matrix, tools, and examples for practice. The importance of the Evaluation Manual and the included Evaluation Planning Matrix was underlined by a Health Promotion expert meeting of which **Chapter 5** describes the outcomes.

During the course of our project I have been the evaluation expert for the JOGG-approach and helped the national coordination office from the JOGG-approach to train programme managers and epidemiologists in the planning and implementation of the programme evaluation of local JOGG-approaches. During these sessions it became clear that provided evaluation tools were

not at all or not properly used. The findings described in Chapter 6 indicate that professionals involved in the JOGG-approach do not often use the Evaluation Manual provided and that evaluation trainings were poorly attended – especially by programme managers. The Evaluation Manual was considered too comprehensive and it was not clear who the designated target groups of the Evaluation Manual were. This study also revealed that those responsible for programme evaluation - programme managers and epidemiologists - often lack specific knowledge and skills to conduct a programme evaluation (capability) in its fullest, that they perceive limited time and financial resources (opportunities) to conduct a comprehensive programme evaluation, and are seldom internally (attitude, other priorities) or externally motivated (lack of incentives) to conduct a programme evaluation.

The case study as described in Chapter 7 supported the findings as presented in Chapter 6. Additionally, evaluation will be facilitated when there is sufficient communication between involved professionals on the relevance, process and planning of the evaluation of the ICIA and when this evaluation is supported by stakeholders at a strategic and tactical level.

MAIN FINDINGS AND REFLECTION

There are three major themes in this thesis: the use and relevance of a logic model, the expectations and use of evaluation tools, and barriers to and facilitators of evaluation.

The use and relevance of a logic model

Our study started with the retrospective development of the EPODE logic model. The goal of this study was to gain a better understanding of the EPODE approach and to develop a logic model to gain a clear understanding of the EPODE approach and which subsequently can support evaluation. Through the analysis of information about EPODE in the form of programme-related documents and interviews with implementation staff in three countries we highlighted the importance of gathering political commitment, developing public and private partnerships, engaging in social marketing, and undertaking programme evaluations. Because the programmes (where the data were collected) differed in context, resources, stakeholders and available capabilities it was not possible to fully operationalise these critical components and represent them fully in a simple diagram. However, this study made clear that different ICIAs that make use of the same principles and aim for the same impact, can share a more

aggregated logic model. Not only can such an umbrella model be useful as a reference for future programme development, implementation and evaluation, it also shows the pathways and the most prominent and defining elements within programme-input, output, outcome and impact. This can be discussed with stakeholders and can then support their engagement in and ownership of the ICIA, resulting in a sustainable implementation of the ICIA.

Any publication of simplified and abstract models of usually non-linear and complex processes (such as the EPODE model and the JOGG model) carries with it a risk in the sense that these models may appear to provide limited information useful for replication of these approaches. When information given in these models is used without taking in to consideration factors that contribute to desired outcomes such as the implementation context, specific activities, needed capabilities, characteristics of target groups it can become oversimplified and can consequently deny the relationships between links in the causal hierarchy which are likely to be recursive rather than unidirectional. There follows a risk that the causal contribution of the different activities within the ICIA is overstated (1, 2). Stufflebeam argued that the evaluation of a complex programme, based upon a logic model makes little sense because it 'assumes that the complex of variables and interactions involved in running a project in the complicated, sometimes chaotic conditions of the real world can be worked out and used a priori to determine the pertinent evaluation questions and variables'(3). However, simpler logic models can be used in briefings and discussions with higher management and allow those responsible for evaluation to focus on key issues (4). Moreover, a simpler logic model can sharpen the planning and implementation of the initiative and facilitate the measurement and data collection of the evaluation process (5). This is especially true for complex emergent programmes (6).

For our study we developed the model by retrospective analyses of available information, as was done previously by Harting and van Assema (7) and also suggested by Leeuw (8). Nevertheless, we recommended making a logic model prior to programme implementation in order to have a good theoretical understanding upfront of how the intervention aims to cause change, so that weak links in the causal chain can be discussed with stakeholders, identified and strengthened (5, 9, 10) and related to reality (e.g. context, specified target group, budget, capabilities). Additionally, to increase benefits of the process of 'logic modelling', it needs to be a collaborative action of multiple stakeholders to develop a

common understanding of the programme, clarify goals and bring focus to the needs and resources of all stakeholders (10).

Although widely used in a number of English speaking countries, the use of a logic model is not common practice within Public Health in the Netherlands (7). To train programme managers and epidemiologists in this new way of thinking will take time not at least because the development of an accurate and strong logic model is not a quick and easy process. It will require training, time and resources (1). This is why a guideline for logic modelling is inserted within the constructed Evaluation Manual in order to support professionals.

For now the EPODE model has proven its use with the development of the JOGG model. Furthermore, It has been used to guide follow-up research in EPODE cities (11), in JOGG cities (12) and as a guidance to the CIAO studies(13). It was used in the JOGG evaluation training and multiple JOGG communities used the affiliated JOGG model to clarify their JOGG-approach (14, 15). In an upcoming paper the use of the EPODE model to guide evaluation and monitoring of one of first JOGG-municipalities (i.e. Zwolle Healthy City) will be described and evaluated.

Expectations and use of evaluation tools

We developed an Evaluation Manual based on the results of a comprehensive analysis on Evaluation Frameworks (Chapter 4). Although the Community Toolbox from the Kansas University scored best it was decided not to translate and use this evaluation framework due to time constraints in ongoing practice of the JOGG-approach. Even though this framework was complete, it was too comprehensive and part of a larger web-based toolbox with numerous referrals towards implementation issues. Since this evaluation framework was based upon the CDC evaluation framework it was decided to use the latter supplemented with information (related to the defined requirements) from the Community Toolbox. The Evaluation Framework was renamed Evaluation Manual and following results of an expert meeting in 2013 (Chapter 5) an Evaluation Planning Matrix was included to this manual. During our qualitative study (Chapter 6) we found that the Evaluation Manual is used moderately in practice by programme managers and epidemiologists.

Although it was considered to be a very good addition to the field of public health in the Netherlands and some aspects were considered supportive to programme evaluation of ICIAs, according to the programme managers and epidemiologists the Evaluation Manual needs to be more concise, more to the point and easier to comprehend. Other impediments to use

according to these professionals included the minimal integration with implementation efforts, the use of research or epidemiologist jargon, its linearity and the lack of clarity regarding the target group. Following the suggestions of the respondents the Evaluation Manual could be improved by the addition of practical tips to deal with both process and outcome evaluation in a constrained and wicked context and a better alignment with the JOGG-model.

Our studies showed that 'lack of time' is considered one of the greatest barriers to programme evaluation, in both planning and execution. A recent study commissioned by the JOGG-office showed that four out of ten municipalities do not comply with the requirement of the JOGG-office that a programme manager should dedicate at least 16 hours per week to the JOGG approach (16). Combined with the strong focus on implementation by strategic and tactic management, as found in our studies, it seems that little time remains for programme evaluation.

We had hoped that the combination of an Evaluation Manual with an evaluation training would enhance the capacity to plan, implement, and evaluate complex public health interventions, as was previously shown by Mayberry et al (17). Although we have not actually measured changes in capacity, the results of both qualitative studies on the experienced barriers to and the use of the Evaluation Manual do not inspire any confidence that changes occurred. However, the recent study commissioned by the JOGG-office showed that in 2015 60% of the JOGG municipalities had drafted an evaluation plan. Of these, 39% had allocated budget to evaluate and set up a working group to implement the activities (16). It is not clear whether the increase of written evaluation plans and allocated budget is a result of the Evaluation Training and Evaluation Manual, since for most epidemiologists and programme managers programme evaluation, including process and effect evaluations, was reasonably new. To comprehend something new, time and resource investment are needed. Moreover, to use new working methods both a positive motivation and a positive value of the new 'intervention' should be present. And both were not accounted for in the studies as presented in this thesis. However, being closely involved in the JOGG-approach and sharing knowledge and skills on programme evaluation with the JOGG-advisors and JOGG-coaches at national level might have influenced awareness of the importance of evaluation, which is also reflected upon by a thorough plan for strengthening monitoring and evaluation of the JOGG-approach at both local and national level (18).

Another finding from our studies was that evaluation trainings were poorly attended – especially by programme managers. Although we encouraged them to participate, their attendance was difficult to achieve. Per year there were 3-4 evaluation training sessions. In these sessions the subsequent steps of the Evaluation Manual were discussed and experiences exchanged among participants. Where necessary, the trainer could deliver tailored advice on certain parts.

In selecting the requirements for the appraisal of the Evaluation Frameworks (Chapter 4) we found that the evaluation of a comprehensive programme like an ICIA had to involve stakeholders at all stages of the programme evaluation process to improve the quality of the evaluation and its credibility among stakeholders. With the case study in two municipalities (Chapter 7) we found that sufficient communication between involved professionals on evaluation can facilitate evaluation. The recent JOGG-monitor showed that more than 65% of the JOGG-approaches engage public and private partners, however it remains difficult to build sustainable and effective partnerships (16). Conducting programme evaluation according to the 6-step approach as displayed in the Evaluation Manual (see Appendix 1 for the 6-step approach) will support a long-term relationship with partners and increase their active engagement. This is because participation of stakeholders leads to increased focus on their needs regarding the results of the approach (10). Moreover, participation adds to community capacity building and it helps to determine together how evaluation outcomes will be used (4). The importance of participation within integrated community-wide approaches or system approaches is confirmed by a recent developed framework to support evaluation of system approaches (i.e., the L.E.A.D. framework). This framework starts by specifying the questions stakeholders want to see answered (19). The content and methods of evaluation should derive from those questions, not from some ideal of how evaluation should happen.

Barriers to and facilitators of ICIA evaluation

In our studies we found that various factors either hamper or facilitate programme evaluation. These studies are, to our knowledge, the first in the Netherlands within the field of Public Health that describe these influencing factors. We have seen that feasibility of the programme evaluation of ICIAs strongly depends on the contextual environment. Moreover, we have shown that lack of time and budget are sometimes given as excuses for a lack of evaluation capability, non-supportive political and policy environment, and a minimum of incentives to

conduct a full programme evaluation. This full programme evaluation has to combine a formative (in the developmental phase) and summative (in the implementation phase) evaluation including process and outcome evaluations, intended to learn from and improve the programme at hand.

Evaluation Resources

We heard from professionals that they have insufficient time and financial resources (opportunities) to conduct a programme evaluation. It seems that evaluation needs to compete with other priorities in policy or politics for scarce available resources such as time and budget. This is not only a barrier in the Netherlands but also in other countries (20-23). However, programmes that are able to show impact to funders and collaborative partners increase their opportunities for additional funding (24), which makes evaluation an indispensable part of programme development and implementation.

The findings of the studies in this thesis show that the availability of generic suitable evaluation instruments was perceived stimulating to evaluation. Others have documented this need for ready made products and standardized questionnaires also (25, 26). Within our work we have provided local JOGG-approaches with standardized instruments to support programme evaluation (i.e., the Progress Tool (in Dutch: de voortgangsmonitor), the 11 JOGG goals with examples, a format Evaluation Plan, the parental questionnaire (in Dutch: Oudervragenlijst ChecKid), process guidelines, the online Activity Monitor, the JOGG-model, the Evaluation Planning Matrix) and provided support through evaluation training. However, the instruments were not widely used and the training sessions were not well attended. Reasons given were the complexity in use and, again, lack of time and funding. It is questionable therefore whether the provision of generic evaluation instruments and evaluation training to programme managers and epidemiologists alone is enough to support programme evaluation by itself. Following results from intensive research programmes on the use of an evaluation manual and the offer of technical assistance (e.g., webinars, group consultation calls, individualized phone and email consultation, and in-person site visits) (27, 28), we believe that an intensive form of evaluation capacity building (including the provision of generic evaluation tools) is necessary within organisations and professionals involved in ICIAs. This will increase understanding and learning from those programmes, increase budget allocation to evaluation, optimize the programmes and in due time increase sustainability.

Considering the limited resources and evaluation capacity available within studied ICIAs we cannot help but question the need for these local initiatives to conduct an outcome evaluation that includes measurements of changes in weight/height and behaviour. A more efficient use of resources would be to focus the evaluation on the optimization of implementing the ICIA and to use data from existing monitoring instruments such as the Youth Health Monitor Conducted by the Regional Public Health Services (RPHS; in Dutch: GGD-en), the National Lifestyle monitor or available data-sources from public- and private stakeholders to see population changes in outcome over a longer period.

Support from decision-makers at multiple levels

Our findings show that strategic and tactical management prioritize implementation and outcome-evaluation, over process-evaluation. This will influences allocation of evaluation resources, especially when the relevance of programme evaluation to the optimization of the ICIA is not advocated. We understand the resemblance Patton likens programme managers to 'jugglers', since they have to prioritize evaluation in a context of multiple competing priorities and limited evaluation capacity (29). Our findings also show that decision makers at strategic and tactical level seldom motivate or incentivise programme managers to conduct a programme evaluation neither in the form of financial contribution, nor by requesting any information other than outcome data. According to two other studies this is because in public organizations health outcomes (i.e., children with obesity) are often seen as more important than results on the process or behavioural outcomes (30, 31).

Communication and involvement with evaluation

Another finding of our studies was that insufficient communication between stakeholders impedes evaluation for example where there is a lack of discussion or reiteration of the relevance, process and planning of the evaluation of the ICIA. In the case study our focus was on the stakeholders from RPHS (i.e., policy advisor and health promotion practitioner) and municipality (i.e., alderman and policy maker). In one case the performance of evaluation was clearly stimulated through the support from these stakeholders and by them requesting data on programme success and the interest shown in the programme. However, this did not happen in the other case. Moreover, in our other studies, and from our own personal experiences, we found that evaluation processes and planning issues are hardly communicated

to stakeholders outside those organisations. However, participation and subsequent commitment is necessary to enhance the evaluation capacity and is primarily created through communication and trust. When planning an ICIA and its evaluation, communication with stakeholders is essential. It helps to focus the programme to the needs and resources of the stakeholders. During the evaluation process problems and a changing context can be discussed with stakeholders. Unfortunately, lack of knowledge on the part of programme management about the importance of evaluation from programme management hampers this much needed communication with stakeholders about evaluation, which diminishes external motives to evaluate and further reduces the likelihood of receiving extra funding for evaluation.

Capability

Another finding from our studies was that those responsible for programme evaluation of ICIAs in the Netherlands - programme managers and epidemiologists - often lack specific knowledge and skills to manage, conduct or advocate a programme evaluation. We noticed for instance that evaluation was often seen as an "end of project cycle" exercise also known as the ex post evaluation. Programme evaluation, however, plays a distinct role at all stages of the project cycle and should therefore be embedded in programme planning (e.g., by conducting network analysis, a community assessment, the articulation of a logic model, involvement of stakeholders).

Another example of this capability gap was the experience and role-perception of epidemiologists. They are experienced in research methodology and often felt incompetent and uncomfortable when pressed into advocating the need for both process and effect evaluation to managers at strategic and tactic level. Since 2008, in the Netherlands' the Public Health Act mandates the systematic monitoring by municipalities performed by the epidemiologists of the RPHSs, to understand the health status and to identify trends in the health status of the population. This rich tradition of monitoring could have resulted in a strong emphasis on evaluation at outcome level, not only by the epidemiologists but consequently by all professionals at operational, tactical and strategic level within the Public Health sectors of municipalities and the RPHSs. Given our findings on the barriers to evaluation (e.g., limited time and resources, unfamiliarity with the relevance of evaluation to programme implementation and success, limited managerial support, low degree of communication between stakeholders and involvement of stakeholders outside the public domain) we do not expect rapid changes at

individual or organisation levels regarding programme evaluation. From the focus group sessions and interviews (Chapter 6 and 7) it became clear that evaluation is a specific field of expertise that needs to be understood well if its full potential for the optimization of ICIAs is to be achieved. This realization is in line with the growing awareness of the importance of Evaluation Capacity Building (ECB) within the international field of evaluation. ECB has been clearly described by Preskill and Boyle (2008):

" *ECB involves the design and implementation of teaching and learning strategies to help individuals, groups, and organizations, learn about what constitutes effective, useful, and professional evaluation practice. The ultimate goal of ECB is sustainable evaluation practice—where members continuously ask questions that matter, collect, analyse, and interpret data, and use evaluation findings for decision-making and action. For evaluation practice to be sustained, participants must be provided with leadership support, incentives, resources, and opportunities to transfer their learning about evaluation to their everyday work. Sustainable evaluation practice also requires the development of systems, processes, policies, and plans that help embed evaluation work into the way the organization accomplishes its mission and strategic goals"(32)*

The tools that have been developed for this thesis are a great first step in ECB. However, more changes are needed, not only instrumental changes but *individual changes* (e.g., evaluation knowledge, skills to conduct or manage programme evaluation and positive attitudes towards evaluation), *programme development changes* (e.g., use of logic modelling in programme development, evaluation embedded in planning, shared understanding of programme outline and goals, use of evaluation findings) and *organizational changes* (e.g., increased demand for programme evaluation, resources allocated to evaluation, support for continuous learning about evaluation, evaluative thinking embedded throughout organizations, evaluation policies and supportive systems).

Assumptions of evaluation

In analysing our qualitative studies we noticed that the terms 'research' and 'evaluation' are often used interchangeably, although these words have different meanings. The purpose of research is to add to scientific knowledge; the purpose of evaluation is to provide useful feedback to programme managers and stakeholders (i.e., the decision makers)(33). Or in other words: research seeks to 'prove' and evaluation seeks to 'improve' (34). This mixing of

meanings by programme managers was also observed in a study among EPODE national programme coordinators by Pettigrew (2014). These programme coordinators explicated the need for specified evaluation criteria and evaluation instruments to compare results across ICIAs using methods that would be adequately rigorous for publication in the scientific literature (26). It is important to disseminate findings of ICIAs to a wider public to increase understanding and stimulate replication. However, evaluation is about a particular initiative, it is generally carried out for the purposes of assessing the initiative and optimizing it and therefore results cannot be generalized (33, 35). This is especially true with complex initiatives that take place in an emergent context. Evaluation focusses on how and why an intervention worked and helps to make decisions about continuation, modification or termination of the initiative. Evaluation should therefore provide information that reflects the most urgent information needs of decision makers given resources available (33, 35) and not, as requested for in the paper of Pettigrew, to publish in scientific literature.

METHODOLOGICAL CONSIDERATIONS

This thesis is based on several qualitative studies. The reported studies have several strengths and limitations and the results should be interpreted in light of these limitations. In this section several considerations regarding the studies' designs, theoretical framework, participants and procedures are discussed.

Overall, our studies have been developed following current practices in France, Spain, Belgium and the Netherlands. This iterative process provided both instruments for practice and policy regarding Integrated Community-wide Intervention Approaches to prevent overweight in children, as follow-up questions to study. Moreover, the studies in this thesis were not a systematically planned but emerged over time (similar to the programmes studied).

Strengths

In four of the studies included in this thesis we extracted information through interviews and focus groups (Chapter 2, 5, 6 and 7). By using a qualitative research method, we were able to ask the respondents about underlying reasons and the context of the experiences. In the studies included in Chapter 5,6 en 7 we made use of a topic list (instead of an interview protocol or closed questions) to provide room for unanticipated views and experiences. These topic lists

were developed within the research group. For the study as described in Chapter 6 we had a specific interviewer for each semi-structured interview, this increased uniformity of questions.

Another strength of the qualitative studies is that the individual interviews took place in closed settings which allowed the respondents to talk freely and this benefited the quality of the data (Chapter 6 and 7). The respondents who participated in these studies were employed by RPHSs and municipalities of varying size. This provided rich data.

An additional strength was the use of an independent experienced moderator to guide the focus groups. This helped the participants to talk freely and provided us with rich data. Moreover all the data coming out of the studies as described in Chapter 2, 4, 6 and 7 have been coded and reviewed by at least 2 researchers.

Limitations

The interviews conducted for the EPODE study in France (Chapter 2) were done with an interpreter who spoke both English and French. The interpreter was acquainted with the EPODE approach and French local and national policy and acted as a cultural broker as well. The interview guide was made so as to allow for short and well-focused questions, which followed naturally and logically from each other. Preceding the interviews, the interview guide and the aims of the study were discussed with the interpreter. However, the use of interpreters carries the risk of translation bias due to paraphrasing and inadequate translation, which can distorted data. Furthermore, the interviews were done with multiple respondents at the same time (e.g. alderman and programme manager) which, combined with the presence of the interpreter, might have resulted in socially desirable answers.

A limitation of the appraisal study (Chapter 3) was the reliance on studies that were found in two web-based applications (i.e. PubMed and Web of Science). A systematic approach for appraising the evaluation frameworks was used which was developed by the research team and based on literature. However, more evaluation frameworks could be found by using a broader internet search engine (e.g. Google) and even more so had we included book publications as well. However it is debatable whether more is necessarily better. Furthermore the evaluation frameworks we have found were mostly complete.

Another limitation was that in the recruitment process for the focus groups and interviews with the programme managers and epidemiologists we experienced some difficulties (Chapter 6). The invited programme managers and the epidemiologists had limited

time available within the time allocated to the JOGG-approaches, which meant only a small number of invitees participated, therefore we were not able to conduct more than one focus group of users to evaluate the evaluation tools. Because the data of this study (Chapter 6) was analysed thematically, it is possible that the context, in which the programme managers and epidemiologists worked has not been taken into account enough.

Although we have attempted to obtain a complete picture of the experiences of programme managers and epidemiologists involved in JOGG-approaches, selection bias may have limited this (Chapter 6 and 7). It could be that only enthusiastic professionals or professionals with a favourable attitude towards the researcher or the topic at hand responded to the study-call. It could be that the views of the most demanding or critical professionals have not emerged in this study. Moreover, the findings of the last study (Chapter 7) are based on only two municipalities. As the two cases differ in many aspects comparability is limited, especially to municipalities without the JOGG-approach. Having said this, due to the use of data-triangulation and contemplation of the data in the research group we believe we were able to provide a full picture of the processes, barriers and facilitators of programme evaluation in ICIAs. Furthermore, since all of the conducted studies are qualitative we have gained insight in evaluation processes, barriers to and facilitators of these processes within ICIAs but we can make no quantitative conclusions on all JOGG-approaches in the Netherlands, let alone to all municipal organisations, to collaborations within integrated approaches or to all professionals involved in these comprehensive programmes.

IMPLICATIONS AND RECOMMENDATIONS

There is a pressing need to act on the problem of childhood obesity. As argued in the introduction of this thesis, ICIAs like the JOGG-approach appear to be the best option to tackle this urgent health problem. Unfortunately, since its establishment the JOGG-approach has been criticised by professionals and the public in the (social) media. The criticisms concerned the collaboration of the JOGG-office with the private sector (i.e. the alleged or actual partnerships with Coca Cola, Mars, Nestlé and Unilever), the organisation of its board and location of the JOGG-office (i.e. the entangled interests of the chairman and residence of the JOGG-office in the building of a disputed social marketing agency), and the local and national public resources devoted to the JOGG-approach (i.e. the percentage of the total national

prevention budget spend on the JOGG-approach and the obligatory JOGG-fee for municipalities). All these elements were magnified on (social) media and related to the lack of plausible scientific proof that the programme is effective in preventing (or as sometimes suggested - in treating) overweight and obesity in children. We would like to discuss some aspects related to the outcomes of this thesis and which need to be considered in the public debate.

First of all, the purpose of the JOGG-approach is to address the multiple individual and environmental factors that cause unhealthy behaviours and to change these positively. To combat obesity an approach is needed that involves both the public and the private sector at all levels of society (36). While the private sector can be criticized for their part in creating obesogenic food environments (especially the food and beverage industry) they also have the power to make those same environments less obesogenic (e.g. reformulation of existing products and the development of new products with healthier compositions; the appliance of voluntary restrictions on all forms of marketing promoting foods high in sugar, salt and unhealthy fat to children; food labelling). National government acknowledges these roles for instance through the National Agreement to Improve Product Composition 2014-2020 between the Ministry of Health, Wellbeing and Sports and representatives of the food industry (37) or the top sector policy of the Dutch government in which The Netherlands Organisation for Scientific Research (NWO) takes part. This policy encourages the collaboration between companies, researchers and the government (38).

And although many academics and public health professionals are wary of engaging with these specific private partners since profit motives are assumed to be inconsistent with public health goals (39) we would argue that alignment with private partners 1) is essential to change the proximal and distal (food) environment and thus is essential for programme success, 2) can offer additional data sources, 3) can increase programme capacities and funding and therefore it should not be limited but quite the contrary; should be stimulated. For example, at local level the private sector can promote healthy products through smart product placement, they can share relevant data to gain insight into behavioural changes or attitude (e.g. data from client databases or cash register data), and their financial contributions can assist in intervention development or add to the implementation or evaluation budget of the ICIA. In the light of public criticism it is important for ICIAs which enter into a partnership with private organisations to make clear and transparent agreements on partnership terms to avoid

any suspicion of conflicts of interest (e.g. no product promotion within the programme or use of programme names on products).

However, public-private partnerships are not easy as shown by the evaluation of public-private partnerships in JOGG-Utrecht (40). This evaluation report shows that mutual trust is needed in each other's intentions and ambitions and clarification of roles. Moreover, it is important to be transparent in decision-making, progress and spending resources, and to make a thoughtful composition on the choice of private parties. To have a successful partnership these private partners should feel involved in the community, have a binding with the theme of diet and/or exercise; have a credible product or service (which is not at odds with the essence of the JOGG-approach), have a clear interest and/or motivation to engage in the JOGG-approach and finally have realistic expectations about results and potential for exposure (40). We believe that engagement of private partners in the evaluation process can keep an ongoing dialogue about expectations regarding the partnership and will stimulate to celebrate successes and as a consequence can create ownership.

Additionally, findings from our studies show a lack of funds and capacity for programme evaluation, and most of the time also for programme implementation, being provided by local governments. Resulting in programme managers 'juggling priorities' with scarce resources. Additional private funding can support programme implementation, evaluation and optimization and hence contribute to programme success. To increase understanding of the role of public private partnerships we recommend evaluation of the impact of public-private partnerships on achieving programme goals. Such an evaluation is an important element in the sustainability and trustworthiness of the public-private partnership and might remove the distrust of such public-private partnerships which the public currently expresses. Furthermore, research is needed to gain a better understanding of the incentives of private organisations to engage in preventive policy to overweight and obesity and children, and to establish an open dialogue with these organisations since these can positively contribute to and change the environment benefitting the prevention of overweight and obesity in children.

Secondly, measuring effectiveness of the long term outcomes (i.e. the prevalence of children affected with overweight) is only useful in a programme that has been fully developed, implemented and optimized to its best potential. Formative evaluation can be used to optimize the building blocks of the programme and the total programme. Continuous process

evaluations and the measurement of the incremental effects in a given context contribute to the optimization. Due to practical barriers (e.g. time, budget, capabilities, political agenda) the building blocks of an ICIA cannot be simultaneously optimally designed. It may therefore take some time to show the 'true' effects of an ICIA on behaviour, environment and health. Once the programme is optimized findings of a summative evaluation (including the measurement of effectiveness) can be used to support decisions as to whether a programme should be adopted, continued, or again modified for improvement. We argue that it is essential for the continuation and the sustainability of the JOGG-approach that the fact that an ICIA is a learning process in which 'trial and error' has to be accepted must be better communicated with the public. And also that sustainable effects on overweight prevalence in children cannot be expected in the first two years (e.g. it took the EPODE approach and its predecessor the FLVS study more than 10 years to show a decrease in overweight prevalence). Nevertheless, we do see some encouraging changes in various JOGG-approaches (e.g. Amsterdam, Utrecht, Zwolle, Den Haag, Dordrecht, Brunssum, Zaanstad, Haarlemmermeer, Leiden).

Systematic and comprehensive programme evaluations, along with more routine assessments, monitoring, and surveillance can offer valuable guidance for improving the quality, intermediate outcomes and health outcomes of the JOGG-approaches. Exemplary and positive are the results that increasingly have become available from multiple local JOGG-approaches (41). These results are presented in the form of factsheets or reports and describe mostly process and output although outcomes are presented too. For instance number of collaborations with stakeholders (e.g. the number of schools that are engaged; policy changes observed in child care centres), the number and descriptions of implemented activities are presented (e.g. issuing of water bottles; number of offered sport activities) and changes in the physical environment (e.g. placement of drinking fountains in public places; transformation of muddy areas to safe and clean playgrounds).

We recommend that the barriers to evaluation identified in this thesis have to be resolved and incentives for evaluation should be increased in order to optimize the (building blocks of the) JOGG-approach and thus achieve the needed changes to decrease overweight and obesity in children. However, we fully accept that the identified barriers to evaluation as presented in this thesis are not easily resolved. Changing evaluation culture and building evaluation capacity in the Netherlands should be seen as a process of evolution. Evolution is not a speedy process: it needs time. And in time, it generates new solutions to pressing

problems and seeks alternative combinations that can be tested through competition with one another in changing circumstances.

Recommendations for practice and policy

As shown in chapter 6 and 7, the performance of evaluation depends on multiple factors affecting the individuals involved as well as within the organisations involved. The main problems for ICIAs are the lack of adequate leadership in programme evaluation, evaluation infrastructure and guidance and evaluation capacity. Programme evaluation of ICIAs needs investments at organizational levels and needs to be prioritized by programme management from the outset of the programme. Organizations should consider programme evaluation as an integral part of their programming, and not only conduct evaluations in response to the requirements of the parties funding the programmes. Local governments and RPHSs should add programme evaluation into the developmental phase of ICIAs.

• Investment in programme evaluation is essential to the improvement of an ICIA. Programme managers and epidemiologists are encouraged to view programme evaluation as a strategic investment in future growth: if programme evaluation can demonstrate to funders and donors that the ICIA works, the ICIA will be stronger when competing for limited financial resources. Furthermore, we recommend that programme managers and epidemiologists advocate (with funders and civil servants at strategic and tactic level) programme evaluation as a means of providing important information for programme management, decision-making and improvement of the ICIA. It is important to discuss expectations with all ICIA stakeholders about the desired outcomes and the period in which they are attainable in the programme development phase in order to create support, create a sense of ownership and trigger more involvement.

A recent study by Storm (42) aimed to identify opportunities for improving collaboration between governmental policy sectors within 'Health in all Policies' approaches. Bekker et al. suggest the use of responsive evaluation to monitor and optimize stakeholder engagement (43). Following our results we believe that discussing aspects of the evaluation process (e.g. community assessment, goal setting, desired results) with stakeholders outside the health sector can increase support for the ICIA to prevent overweight and obesity in children through the creation of shared goals. Subsequently, this will stimulate more formal collaboration

strategies and support a future programmatic joint approach. The study of Bekker et al. supports this idea (43).

• An ever present barrier for evaluation seems to be limitations in budget. However, depending on the chosen form, evaluation can encompass efficiency (the ability to undertake activities at the minimum cost possible) and effectiveness (whether the activity is achieving the objectives which were set for it). It can provide programme managers with better means for learning from past experiences, improve the implementation of activities and allocation of resources and demonstrate results as part of accountability. Although evaluation costs vary widely, in order to benefit the advantages, we recommend programme planners to earmark at least 10% of the programme budget available for programme evaluation. Moreover, we recommended municipalities to include programme evaluation as part of the organization's formal budget, setting out to demonstrate that evidence and informed decision-making is an organizational priority and part of their operating culture; this can speak volumes to potential donors, large funders and can be used in the public debate about proving effectiveness of the programme.

• Data collection is often a significant cost for evaluations. Utilizing existing data sets may drive down costs. Both the RPHSs and with other public and private organizations are collecting data on (determinants of) behaviour and health. We recommend using these to monitor outcomes and to look for opportunities to align these. The existence of these data sets and monitoring systems should be discussed at the initial evaluation meeting.

• Awareness of the relevance of programme evaluation amongst those involved in implementation and evaluation of ICIA's at operational, strategic and tactical level is key. All levels of staff should be encouraged to buy into the importance of evaluation and the benefits of evaluation to the organisation as a whole. Therefore communication of the relevance of and the process involved in good programme evaluation should be encouraged and made available at local level. To create this awareness, to stimulate communication and to build evaluation capacity technical assistance in the form of evaluation guidance on the job from an evaluation coach, the use of an evaluation manual and participation in evaluation training can be enormously helpful within the stakeholders of the ICIA (e.g. local governments, RPHS, sport, social welfare).

• Organizations based in the communities and involved in the implementation and evaluation of ICIAs (e.g., RPHSs, local governments) must be able to critically analyse the internal logic of the interventions being implemented by developing a logic model. From this, they can develop

concrete and measurable objectives, define outcomes and process measures to assess how and if the objectives are achieved. This knowledge is the basis for evaluations that create and refine ICIAs.

• Given the fact that ICIAs are new and are being developed in an emerging context, and that programme evaluation can support programme optimization and sustainability, communication and evaluation management skills are crucial for programme management and should be built into job descriptions and recruitment and training — and not sacrificed to budget limitations or timeframes. In addition to these capability requirements we recommend that stakeholders at operational and strategic level (epidemiologists, programme managers and administrative managers/directors) within the municipality who are responsible for implementation and evaluation of the ICIA should attend courses or training in programme evaluation in order to build evaluation capacity.

• We recommend employing someone who is responsible for programme evaluation (e.g. an evaluation manager or evaluator) per programme. This evaluator can focus on the information is needed, who will measure what, under what conditions, by what methods, at what cost, construct an evaluation design with the usability of its results in mind and finally feedback results to programme management.

Recommendations to education

• We recommend Universities (e.g. faculties of Health Sciences, Behavioural sciences) to pay attention to the evaluation of complex programmes in real-life settings which are increasingly being implemented. Moreover, we feel it is important to begin specific curricula to educate future programme managers and policy makers in the theory, outline and relevance of programme evaluation.

Recommendations to national organisations, national policy and funders

• To evaluate progress of ICIAs it is important to assure timely and meaningful collection and analysis of data to inform on the progress of the intervention approaches. This needs to be assured at national, regional, and at community levels. But it also has to become part of the national political agenda how to support regional and local governments in the programme evaluation of ICIA since we feel that the number of integrated cross-sectional interventions will

increase. Local governments have to be the facilitator and stimulator in managing the evaluation of ICIAs in their municipality.

• To stimulate programme evaluation of ICIAs, we recommend national policy and funders to support local professionals to secure evaluation resources, provide tailored training and tools to enhance evaluation competences and stimulate strategic communication on evaluation. Moreover, we recommend funders desiring evaluation to consider earmarking budget for programme evaluation rather than requiring municipalities or RPHS to take money out of programming. This latter will also enhance the employment of external evaluators to increase independent evaluation and decrease prejudice on programme progress.

• Furthermore, government agencies and foundations (e.g., ZonMW, NWO) that typically fund public health research and implementation should increasingly request that the implementers and developers of ICIAs (e.g., Universities, research institutes, RPHSs, municipalities) demonstrate their theory based concepts and assumptions of the approach in the form of a logic model. This will help all involved and the funders to understand the logic underlying the programme and it includes a delineation of when and why particular activities should be done, the expected outcomes of each activity, the objectives of those activities, and how these relate to the broader health and behaviour goals.

• Despite the fact that the developed evaluation tools were meant to be part of a single package, they are not all being used systematically by the JOGG municipalities. The evaluation study of the Evaluation Manual concluded that a web-based version of the suggested evaluation approach is preferable; being easily accessible and (for the developers) easy to improve. We recommend that the evaluation tools should be continuously optimized and measures should be taken to increase understanding of how to deploy the products in practice. In addition, we recommend that the JOGG-office should continue to support programme managers and epidemiologists in the design and implementation of ICIA programme evaluation with the help of a JOGG-coach or JOGG-expert.

Recommendations for further research

Our studies made clear that there is a lack of support systems for implementing evaluation activities at community level. Further insight is needed into sustainable support systems.

Since, to date, there has only been limited evaluation of the integrated community-wide intervention approach and our exploratory studies have shown that different barriers and facilitators play a role in the design and implementation of the evaluation, we recommend:

• more extensive research to improve understanding of how capabilities (i.e., knowledge, skills, motivation) and attitudes related to the programme evaluation of ICIAs within RPHSs and municipalities can be improved. How this affects the behaviour of professionals in their work, and what improvements can then be expected at the organizational level. Moreover, future research is needed to understand the role of an evaluation trainer and coach in the facilitation of this capacity building.

• more extensive research to establish how the target group and stakeholders can be more constructively involved in evaluation

• research to increase understanding of the factors within organizations responsible for the ICIA to prevent obesity in children which play a role in the design and implementation of programme evaluations (e.g. organization culture, protocols, policies, hierarchy, education) and how these factors can be changed to improve the chances of a successful programme evaluation of ICIAs.

• research into a more user friendly and easily accessible digital tool to support programme evaluation. This tool should be backed up by a help desk and the facility to see the implementation of the relevant ICIA via a dashboard. We recommend that such a tool be developed together with research into the best way to implement and use it. When doing so it will be important to take the identified barriers to ,and facilitators of, programme evaluation of ICIAs into account.

GENERAL CONCLUSION

This thesis reported on the construction of an umbrella logic model from an international Integrated Community-Wide Intervention Approaches (ICIAs) to prevent overweight and obesity in children, which is widely used in practice and research. Additionally, it identified barriers to and facilitators of programme evaluation in ICIAs and the need for and usability of an Evaluation Manual.

Given the high prevalence of overweight and obesity, there is a growing interest in effective approaches to tackle the increasing rates of childhood overweight and obesity. Due

to their complicated and multifaceted aetiology, overweight and obesity should not be addressed only by efforts at the individual level but primarily by multisectoral efforts. ICIAs are regarded as appropriate prevention efforts. However, these comprehensive programmes will not achieve the hoped for and theorized changes when these are not continuously improved on the basis of programme evaluation results. Programme evaluation can serve as a guide to programme management, can increase participation and support from stakeholders, increase the possibilities for continued funding and sustainability and provide the opportunity to share experiences and results with other communities. Policy makers at multiple levels in local and national government and professionals involved in ICIAs need be made fully aware of the importance of programme evaluation. This awareness will help to trigger funding of programme evaluation and will provide more opportunities for evaluation capacity building. This increase in evaluation capability will eventually lead to sustainable implementation from an optimal integrated community-wide intervention approach adapted to the specific context, which will ultimately enhance the effectiveness of such approaches.

REFERENCES

1. Kaplan SA, Garrett KE. The use of logic models by community-based initiatives. Evaluation and Program Planning. 2005;28(2):167-72.
2. Patton MQ. Utilization-focused Evaluation. 3rd ed. Thousand Oaks, CA, US: Sage; 1997.
3. Stufflebeam DLe, pp. 245–66. . The 21st Century CIPP Model. In: Alkin MC, editor. Evaluation Roots. Newbury Park, CA: SAGE; 2004. p. 245–66.
4. Wholey JS. Evaluability Assessment. In: Wholey JS, Hatry HP, Newcomer KE, editors. Handbook of Practical Program Evaluation. 2nd ed. San Fransisco, CA, US: Jossey-Bass; 2004. p. 33-62.
5. Connell JP, Kubisch AC. Applying a Theory of Change Approach to the Evaluation of Comprehensive Community Initiatives: Progress, Prospects and Problems In: Fulbright-Anderson K, Kubisch AC, Connell JP, editors. New Approaches to Evaluating Community Initiatives. 2. Washington, DC, US: The Aspen Institute; 1998.
6. Rogers PJ. Using Programme Theory to Evaluate Complicated and Complex Aspects of Interventions. Evaluation. 2008;14(1):29-48.
7. Harting J, Van Assema P. Exploring the conceptualization of program theories in Dutch community programs: a multiple case study. Health promotion international. 2011;26(1):23-36.
8. Leeuw FL. Reconstructing Program Theories: Methods Available and Problems to be Solved. American Journal of Evaluation. 2003;24(1):5-20.
9. Craig P, Dieppe P, Macintyre S, Michie S, Nazareth I, Petticrew M. Developing and evaluating complex interventions: the new Medical Research Council guidance. The BMJ. 2008;337:a1655.
10. Funnell S, Rogers P. Purposeful Program Theory. 1 ed. San Fransisco: Jossey-Bass; 2011.
11. Mantziki K, Vassilopoulos A, Radulian G, Borys J-M, Du Plessis H, Gregório MJ, et al. Inequities in energy-balance related behaviours and family environmental determinants in European children: baseline results of the prospective EPHE evaluation study. BMC Public Health. 2015;15:1203.
12. van der Kleij RM, Crone MR, Paulussen TG, van de Gaar VM, Reis R. A stitch in time saves nine? A repeated cross-sectional case study on the implementation of the intersectoral community approach Youth At a Healthy Weight. BMC Public Health. 2015;15:1032.
13. van Koperen TM, van der Kleij MJJ, Renders CM, Crone MR, Hendriks AM, Jansen M, et al. Design of ClAO, a research program to support the development of an integrated approach to prevent overweight and obesity in the Netherlands. BMC Obesity. 2014;1(5):1-12.
14. Gemeente Haarlemmermeer. Inspanningen & Opbrengsten Jongeren Op Gezond Gewicht Haarlemmermeer (2012-2015). Haarlemmermeer: Gemeente, 2015.
15. Gemeente Utrecht. Procesevaluatie JOGG-Kanaleneiland 2012-2014. The Netherlands, Utrecht: Gemeente Urtrecht Sector Volksgezondheid 2015.
16. Reijgersberg N, Pulles I, Breedveld K, de Hollander E. Monitor Jongeren Op Gezond Gewicht 2015. The Netherlands, Utrecht: Mulier Instituut, 2015.
17. Mayberry RM, Daniels P, Yancey EM, Akintobi TH, Berry J, Clark N, et al. Enhancing community-based organizations' capacity for HIV/AIDS education and prevention. Evaluation and program planning. 2009;32(3):213-20.

18. Reijgersberg N, Milder I. Monitoring en evaluatie Jongeren op Gezond Gewicht. Een plan voor versterking van monitoring en evaluatie. Den Haag: Jongeren op Gezond Gewicht, 2015 Maart 2016. Report No.

19. Chatterji M, Green LW, Kumanyika S. L.E.A.D.: a framework for evidence gathering and use for the prevention of obesity and other complex public health problems. Health education & behavior : the official publication of the Society for Public Health Education. 2014;41(1):85-99.

20. Moore L, Gibbs L. Evaluation of community-based obesity interventions. In: Waters E, Swinburn B, Seidell J, Uauy R, editors. Preventing childhood obesity: evidence policy and practice. Chichester: John Wiley & Sons; 2010. p. 157-66.

21. Van Koperen TM, Jebb SA, Summerbell CD, Visscher TL, Romon M, Borys JM, et al. Characterizing the EPODE logic model: unravelling the past and informing the future. Obes Rev. 2013;14(2):162-70.

22. Kegeles SM, Rebchook GM, S. T. Challenges and facilitators to building program evaluation capacity among community-based organizations. AIDS Education and Prevention. 2005;17(4):284-99.

23. Bukman AJ, Jonge MAJG, Renes RJ. Raalte Gezond!: De EPODE aanpak in de praktijk. Tijdschrift voor Gezondheidswetenschappen. 2011;89(6):323-9.

24. Alexander JA, Weiner BJ, Metzger ME, Shortell SM, Bazzoli GJ, Hasnain-Wynia R, et al. Sustainability of Collaborative Capacity in Community Health Partnerships. Medical Care Research and Review. 2003;60(4 suppl):130S-60S.

25. Kok MO, Vaandrager L, Bal R, Schuit J. Practitioner opinions on health promotion interventions that work: opening the 'black box' of a linear evidence-based approach. Social science & medicine (1982). 2012;74(5):715-23.

26. Pettigrew S, Borys JM, du Plessis HR, Walter L, Huang TTK, Levi J, et al. Process evaluation outcomes from a global child obesity prevention intervention. BMC Public Health. 2014;14:757.

27. Campbell R, Townsend SM, Shaw J, Karim N, Markowitz J. Can a workbook work? Examining whether a practitioner evaluation toolkit can promote instrumental use. Evaluation and Program Planning. 2015;52:107-17.

28. Oliver M, MacBean J, Conole G, Harvey J. Using a toolkit to support the evaluation of learning. Journal of Computer Assisted Learning. 2002;18(2):199-208.

29. Patton MQ. Utilization-focused evaluation. 4th ed. New York: Guilford; 2008.

30. Haboush A, Phebus T, Tanata Ashby D, Zaikina-Montgomery H, Kindig K. Still unhealthy 2009: building community research to identify risk factors and health outcomes in childhood obesity. Journal of community health. 2011;36(1):111-20.

31. Läubli Loud M, Mayne J, editors. Enhancing Evaluation use. Insights from internal evaluation units. Thousand Oaks, CA, USA: Sage Publications; 2013.

32. Preskill H, Boyle S. A multidisciplinary model of evaluation capacity building. American Journal of Evaluation. 2008;29(4):443-59.

33. Levin-Rozalis M. Evaluation and research: Differences and similarities. Canadian Journal of Program Evaluation. 2003;18(2):1–31.

34. Patton MQ. Qualitative evaluation and research methods. 2 ed. Newbury Park, CA: Sage; 1990. 532 p.

35. Harris MJ. Evaluating public and community health programmes. 1 ed. US, CA, San Fransisco: Jossey-Bass; 2010.

36. Gortmaker SL, Swinburn BA, Levy D, Carter R, Mabry PL, Finegood DT, et al. Changing the future of obesity: science, policy, and action. Lancet (London, England). 2011;378(9793):838-47.

37. Ministry of Health WaS. Akkoord Verbetering Productsamenstelling The Hague2014 [cited 2016 29-06]. Available from: https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport/nieuws/2014/01/23/schippers-en-bedrijfsleven-tekenen-akkoord-vermindering-zout-vet-en-calorieen.

38. Netherlands Organisation for Scientific Research. NWO and the Top sectors The Hague: Netherlands Organisation for Scientific Research,; 2014 [cited 2016 29-06]. Available from: http://www.nwo.nl/beleid/topsectoren.

39. Ludwig DS, Nestle M. CAn the food industry play a constructive role in the obesity epidemic? JAMA. 2008;300(15):1808-11.

40. Noordink M, Stutje A. Publiek-private samenwerking JOGG Utrecht 2012-2014. Evaluatie. Utrecht: KWINK groep, 2015.

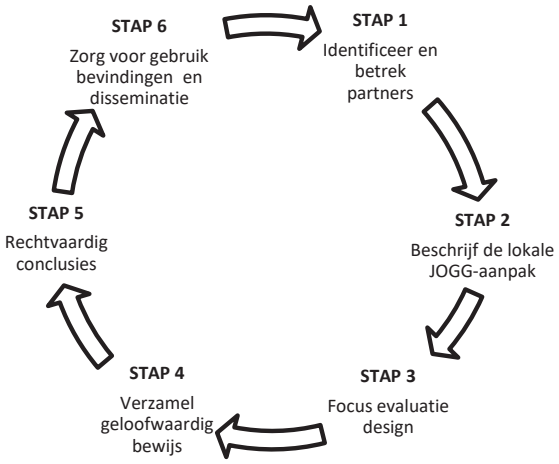
41. Jongeren op Gezond Gewicht. Meten The Hague: Jongeren op Gezond Gewicht; 2016 [cited 2016 29-06-2016]. Available from: https://jongerenopgezondgewicht.nl/meten.

42. Storm I, den Hertog F, van Oers H, Schuit AJ. How to improve collaboration between the public health sector and other policy sectors to reduce health inequalities? – A study in sixteen municipalities in the Netherlands. International Journal for Equity in Health. 2016;15(1):1-14.

43. Bekker M, Mutsaers B, Dumont R, Boers E, Jansen M. Responsieve evaluatie van Integrale Actie (RIA): een methode voor monitoring door stakeholderdialogen over gezondheidsgerelateerde integrale actie. Tijdschrift voor gezondheidswetenschappen 2015;6/2015.

Appendix 1 (in Dutch)

STAPPENPLAN EVALUATIE



1. Identificeer en betrek partners

- Maak een overzicht met potentiele belanghebbenden van het programma
- Bepaal welke belanghebbenden een rol kunnen spelen in het evaluatieproces
- Betrek actief en persoonlijk belanghebbenden of vertegenwoordigers van belanghebbende organisaties
- Maak een plan voor het betrekken van de belanghebbenden bij de evaluatie en bekijk op welke moment zij van belang zijn in het evaluatieproces
- Benader een aantal belanghebbenden voor regelmatige deelname aan belangrijke evaluatie stappen (programma beschrijving, logisch model, evaluatie vragen opstellen, dissemineren van resultaten)

2. Beschrijf de lokale JOGG-aanpak

- Identificeer het gezondheidsprobleem
- Geef belanghebbenden uitleg over de JOGG-aanpak en het belang van evaluatie
- Verkrijg inzicht in hun interesse voor JOGG en hun verwachtingen qua uitkomsten
- Stel de doelen en tussendoelen van het programma (en programma onderdelen) op met de belanghebbenden
- Controleer of in het Plan van Aanpak behoeften, doelgroepen, uitkomsten, activiteiten en bronnen en middelen genoemd zijn
- Bepaal de ontwikkelfase van de lokale JOGG aanpak en de context van JOGG
- Maak een logisch model. Eventueel per programma-onderdeel één

3. Focus de evaluatie
- Definieer het doel en het gebruik van de evaluatie en de uitkomsten
- Weet op welke vragen de evaluatie antwoord moet geven
- Achterhaal of belanghebbenden budget beschikbaar hebben voor monitoring en evaluatie
- Bepaal op basis van het doel van de evaluatie, toekomstig gebruik van bevindingen, budget en timing op welke onderdelen van het logisch model de evaluatie zich gaat richten
- Bepaal bij de gekozen onderdelen de evaluatievragen en bespreek deze met belanghebbenden
- Bekijk op basis van voorgaande de mogelijkheden van het evaluatie design
- Bespreek de noodzakelijk logistiek van de monitoring en evaluatie en bepaal het evaluatiebudget
- Schrijf het evaluatie plan (zie format JOGG evaluatieplan)

4. Verzamel geloofwaardig bewijs
- Bepaal op basis van de doelen, het logisch model en de evaluatievragen de te meten indicatoren (betrek experts)
- Bekijk de beschikbare databronnen (ook bij belanghebbenden) en kies de meest voor de hand liggende
- Bepaal de verschillende methoden van data-verzameling
- Pilot test nieuwe meetinstrumenten
- Wees je bewust van het belang van gebruik van verschillende onderzoeksmethoden (kwalitatief en kwantitatief)
- Vraag experts om te kijken naar kwaliteit en kwantiteit van onderzoeksgroep, databronnen, meetinstrumenten etc.
- Vul de Evaluatie Planning Matrix in voor de te evalueren doelen en evaluatievragen
- Stuur de data verzameling aan, wees beschikbaar voor controle van de planning

5. Rechtvaardig conclusies
- Zorg ervoor dat de data geen fouten bevat
- Houd rekening met de context wanneer de data wordt geanalyseerd
- Wanneer verschillende methoden worden gebruikt voor dataverzameling leg deze naast elkaar en bekijk de consistentie van de informatie
- Wees je bewust van alternatieve verklaringen van de bevindingen
- Vergelijk de gevonden uitkomsten met uitkomsten van eerdere jaren
- Vergelijk daadwerkelijke uitkomsten met de verwachtte uitkomsten
- Documenteer eventuele bias
- Bestudeer de beperkingen van de evaluatie

6. Zorg voor gebruik van bevindingen en disseminatie

- Bepaal een strategie over hoe het gebruik van de evaluatie bevindingen te verhogen
- Zorg dat de bevindingen worden teruggekoppeld aan het programma of aan de interventies
- Bepaal waar extra training of technische ondersteuning nodig is
- Gebruik de evaluatie resultaten om JOGG te promoten
- Denk na over mogelijke tussenrapportages naar partnerorganisaties en financiers
- Bespreek gebruik van communicatiekanalen van belanghebbenden
- Maak keuzes in communicatiekanalen voor verschillend 'toehoorders'
- Organiseer vervolgbijeenkomsten met belanghebbenden voor bespreken van gebruik bevindingen

Summary

General introduction

This thesis reports of several studies into the evaluation of Integrated Community-wide Intervention Approaches (ICIA). The thesis aimed to i) explore the evaluation framework of the integrated community-wide intervention approach to prevent overweight and obesity in children, ii) to gain an understanding of barriers to and facilitators of programme evaluation of ICIAs and iii) based upon this information, we aimed to develop recommendations about how to facilitate evaluation of ICIAs. This thesis starts with a general introduction in **Chapter 1**, in which the importance of overweight prevention in children is highlighted. Moreover in this chapter the need for comprehensive multi-level and multi-setting oriented programmes to address all reciprocal determinants of childhood overweight and obesity is introduced. Finally, the introduction stipulates that programme evaluation is important to improve complex programmes, to establish sustainable community partnerships, to assess goal achievement and to inform and influence decision-makers. Even though we understand that evaluation is indispensable and that it needs to be tailored to each specific programme because its design depends upon available resource, success definition from stakeholders and its purpose we would like to understand better how to do that and what is needed to do it.

Summary of findings

To illustrate what an Integrated Community-wide Intervention Approaches looks like a qualitative retrospective study with interviews and document analysis were conducted in EPODE communities combined with group discussions with the EPODE scientific advisory. This qualitative study, as described in **Chapter 2**, resulted in insight in the dynamics and key elements of the French EPODE approach, depicted in a concise logic model. This model, the EPODE logic model, showed the four critical components of this ICIA (i.e. political commitment, public-private partnerships, social marketing principles and scientific evaluation and dissemination) and its aim to increase the percentage of children on a healthy weight through the offer of multiple activities, intersectoral collaboration and community capacity resulting in changes in the individuals behaviour and attitude and changes in the environment.

The EPODE logic model was used as a reference for the CIAO studies, whose design is described in **Chapter 3**. The aim of CIAO is to gain 1) theoretical and practical insight of

necessary political support to the Integrated Community-wide Intervention Approach, 2) insight in and tools supportive to parental education, 3) insight in challenges of, methods and tools supportive to implementation, 4) a better scope and blueprints on the use of social marketing within ICIA and 5) the outline of ICIA evaluation including its contributing or restricting factors. Five Dutch Academic Collaborative Centres (ACCs) work together to study these aims. The studies as presented in the following chapters are part of CIAO.

In **Chapter 4** a comprehensive four-phase appraisal process of evaluation frameworks for Integrated Community-wide Intervention Approaches is described. Twenty-five evaluation frameworks were initially included. Only six of those were appraised in the fourth phase on specified requirements (i.e. presence of advice on resources generation and allocation, information on capacity building, information on the use and development of a logic model, advice on design issues, possibilities of altering evaluation tactics following emergent design and information on dissemination of results), the others did not meet the third phase criteria. Not only did the definition of necessary requirements supported our understanding of the evaluation process of ICIA's and its challenges it also showed limitations of several evaluation frameworks. Most of the evaluation frameworks lacked information on resource generation and allocation and on the importance of organizational change as part of building evaluation capacity. One of the best scoring evaluation frameworks from this appraisal was used as a base for the evaluation framework of the JOGG-approach in the Netherlands. Subsequently the experiences of the first six municipalities to adopt the JOGG-approach were added to this evaluation framework. This guiding evaluation framework was renamed Evaluation Manual and offered to all JOGG programme managers and epidemiologists through a private web environment and was used as a means of evaluation training.

Chapter 5 is a translation of a Dutch non-reviewed article and presents the findings of an expert meeting on the Evaluation Framework for the Integrated Community-wide Intervention Approach to prevent overweight. This article presents a view on the development process of the Evaluation Framework. The aim of the expert meeting was to achieve consensus on purpose, audience, content, design, dissemination and ownership of the ICIA Evaluation Framework, to gain knowledge of instruments available in the field and to obtain support for (future use) of the ICIA Evaluation Framework. Twenty-seven experts from science, practice and policy participated in the expert meeting. The experts believe that an

Evaluation Framework can improve the quality of ICIAs and would be able to harmonize and standardize evaluation methods. The Evaluation Framework should consist of 1) a 'planning tool' including a roadmap of the organization and implementation of the evaluation supplemented with supportive instruments and 2) a 'toolbox' with an overview of targets, indicators, outcome measures, best practices and measuring instruments. Furthermore, the experts advised the development of a digital tool. The suggested 'planning tool' became the Evaluation Manual and the 'toolbox' was inserted in the Evaluation Manual.

Regarding the factors contributing to or restricting the evaluation of community-wide interventions approaches we conducted two studies. Chapter 6 describes a qualitative study on these factors among programme managers and epidemiologists involved in the JOGG-approach. Furthermore, the use and usability of evaluation tools provided to the JOGG-programme managers and involved epidemiologists are studied as well as perception of their use by experts in implementation and evaluation of health promotion programmes. Findings showed that evaluation is hampered by insufficient time, budget and experience with ICIAs, lack of leadership in evaluation planning and implementation and limited advocacy for evaluation. Managers did not prioritise process evaluation nor the involvement of stakeholders or invest in evaluation capacity building. Provided evaluation tools are considered necessary but too comprehensive considering limited resources.

Chapter 7 presents the findings of a case study of two JOGG-municipalities. In this qualitative study triangulation of interviews with programme managers, epidemiologists, policy makers and aldermen, observations and document analysis was done. Limited time and financial budget were again inhibiting factors to the evaluation of the ICIA. However, a lack of evaluation knowledge and a negative attitude towards evaluation and limited communication with key-stakeholders preceded this limiting budget. Facilitators to evaluation of ICIA were sufficient communication on evaluation between involved professionals and shared support from all stakeholders at strategic and tactical level to evaluate the programme. To enhance evaluation capacity tailored training is in place combined with competence enhancing tools. More communication on evaluation at strategic level can stimulate the conduct of evaluation.

General discussion

Finally, **Chapter 8** summarizes the main findings and reflects on the three major themes of this thesis: the use and relevance of a logic model, the expectations and use of evaluation tools, and barriers to and facilitators of ICIA evaluation. Subsequently the strengths and limitations of the thesis are discussed and recommendations for practice, policy, education and future research are presented. To prevent overweight and obesity in children integrated community-wide intervention approaches are needed. To improve these approaches programme evaluation that commences at the development phase of the ICIA and engages stakeholders is necessary. However, multiple barriers at individual (e.g. negative attitude towards evaluation, evaluation knowledge and skills), programme (e.g. evaluation not embedded in programme planning, limited use of evaluation findings, engagement of stakeholders) and organisational level (e.g. limited demand of programme evaluation, no resources allocated for evaluation, evaluative thinking not embedded throughout organization) hinder the programme evaluation of ICIAs. Stimulating are the communication on evaluation between involved professionals and shared support from all stakeholders at strategic and tactical level to evaluate the programme. To enhance evaluation capacity tailored training is in place combined with competence enhancing tools and more communication on evaluation at strategic level. We recommend local governments, funders and public organisations to prioritize and invest in programme evaluation, in evaluation capacity building and in future research to sustainable support systems.

Samenvatting

Inleiding

Overgewicht en obesitas bij kinderen is een serieus volksgezondheidsprobleem. Het wordt veroorzaakt door een complex geheel van onderling samenhangende persoonlijke, sociale en omgevingsfactoren. Preventie van overgewicht vraagt dan ook om integrale aanpak op wijkniveau gericht op een gezonde leefomgeving voor kinderen.

In **Hoofdstuk 1**, de algemene inleiding van dit proefschrift, wordt het belang van preventie van overgewicht bij kinderen verduidelijkt en wordt de Integrale Community-brede Interventie Aanpak (ICIA) als meest aannemelijke oplossing geïntroduceerd. Deze aanpak kenmerkt zich door de inzet van meerdere interventies, gericht op meerdere doelgroepen, in verschillende settings door verschillende professionals. Belangrijk in het optimaliseren van deze complexe aanpak is de inzet van programma evaluatie. Maar evaluatie draagt ook bij aan duurzame verbintenissen tussen lokale organisaties, helpt in het vaststellen van de te behalen doelen van de aanpak en achteraf het bepalen van doelrealisatie. Bovendien is het evaluatieproces tevens van belang voor het informeren en beïnvloeden van beslissers. Echter, een evaluatie moet worden aangepast aan elk specifiek programma omdat het ontwerp afhankelijk is van beschikbare middelen, de definitie van het succes van de aanpak volgens de belanghebbenden en het doel ervan. Dit proefschrift richt zich op i) het verkennen van het evaluatie kader van de integrale community-brede interventie aanpak van preventie van overgewicht en obesitas bij kinderen, ii) het verkrijgen van inzicht in de belemmerende en bevorderende factoren van programma-evaluatie van ICIA-en en iii) op basis van deze informatie, het doen van aanbevelingen over hoe de evaluatie van ICIA-en in de toekomst te faciliteren

Samenvatting van belangrijkste bevindingen

Om te illustreren hoe een ICIA eruit ziet is een kwalitatieve retrospectief onderzoek uitgevoerd bij een Franse ICIA genaamd EPODE. Deze studie is beschreven in **Hoofdstuk 2.** Door middel van deze studie werd dankzij informatie uit interviews, documenten en groepsdiscussies inzicht verkregen in de dynamiek en de belangrijkste elementen van de Franse EPODE aanpak. De aanpak is afgebeeld in een beknopte logisch model (‘EPODE logic model’). Dit model toont de vier cruciale onderdelen van deze ICIA (te weten: politiek draagvlak, publiek-private partnerschappen, sociale marketing principes en wetenschappelijke evaluatie en verspreiding), de interventies op verschillende onderdelen en

het uiteindelijk doel van deze ICIA: het vergroten van het percentage kinderen met gezond gewicht in de wijk te vergroten.

Het EPODE logisch model werd gebruikt als referentie voor de studies van het Consortium integrale aanpak Overgewicht (CIAO), waarvan het ontwerp is beschreven in **Hoofdstuk 3**. De CIAO studies trachten door middel van 5 onderzoeken 1) theoretisch en praktisch inzicht verkrijgen van het benodigde politieke draagvlak ten behoeve van de ICIA, 2) inzicht te verkrijgen in de noodzakelijke educatie van ouders m.b.t. gezonde voeding en gezonde beweging voor hun kinderen en de ontwikkeling van hieraan ondersteunende instrumenten, 3) het verkrijgen van inzicht in de uitdagingen van de uitvoering van ICIA-en, en de ontwikkeling van methoden en instrumenten ondersteunend voor de uitvoering, 4) het verkrijgen van inzicht en het maken van een blauwdruk voor de inzet van sociale marketing binnen ICIA en 5) het verkrijgen van inzicht in het evaluatie raamwerk van ICIA-en incluis de belemmerende en bevorderende factoren. Vijf Nederlandse Academische Werkplaatsen werken samen om deze doelstellingen te bestuderen. De studies zoals gepresenteerd in de volgende hoofdstukken maken deel uit van het vijfde onderzoek van CIAO.

Hoofdstuk 4 beschrijft een uitgebreid beoordelingsproces van evaluatie raamwerken voor ICIA-en. Na een uitgebreide voorselectie werden 25 evaluatie raamwerken geïncludeerd in het onderzoek. Slechts zes van deze raamwerken werden in de vierde fase beoordeeld op vooraf gespecificeerde eisen (te weten: de aanwezigheid van advisering over het genereren en toewijzen van evaluatiebudget, informatie over de opbouw van capaciteit met betrekking tot evaluatie, informatie over het gebruik en de ontwikkeling van een logisch model, advies over het evaluatie design, mogelijkheden om het design tussentijds aan te passen en informatie over de verspreiding van de resultaten). Niet alleen heeft het opstellen van de specificaties bijgedragen aan ons begrip en het beoordelingsproces van de evaluatie raamwerken, maar het toonde ook de verschillende beperkingen van de geselecteerde raamwerken. Meerder van de evaluatie raamwerken gaven onvoldoende informatie over het verkrijgen van evaluatie budget en het belang van organisationele veranderingen als onderdeel van het opbouwen van evaluatie capaciteit. Het vaststellen van de beoordelingscriteria is ondersteunend geweest aan een beter begrip van ICIA-en en de daarbij behorende uitdagingen met betrekking tot evaluatie. Een van de best scorende evaluatie raamwerken werd gebruikt als basis voor het evaluatie raamwerk van de JOGG-

aanpak in Nederland. Vervolgens worden de ervaringen van de eerste zes gemeenten met de JOGG-aanpak toegevoegd aan dit evaluatie raamwerk. Dit evaluatie raamwerk werd omgedoopt tot Evaluatie Handboek voorzien van verschillende instrumenten en checklists en aangeboden aan alle JOGG-programma managers en epidemiologen via een eigen web omgeving. tevens werd het gebruikt als een hulpmiddel in de evaluatie trainingen..

Hoofdstuk 5 is een vertaling van een Nederlandse niet peer-reviewed artikel en presenteert de bevindingen van een expert meeting over het evaluatie raamwerk voor ICIA-en die werken aan preventie van overgewicht. Dit artikel presenteert een blik op het ontwikkelingsproces van het evaluatie raamwerk. De deskundigen zijn van mening dat een evaluatie raamwerk de kwaliteit van ICIA-en kan verbeteren en in mogelijk ook in staat zou moeten zijn evaluatie methodieken op te lijnen en te standaardiseren. Het evaluatie raamwerk moet bestaan uit 1) een 'plannings instrument' inclusief een handleiding van de organisatie en uitvoering van de evaluatie, aangevuld met ondersteunende instrumenten en 2) een 'gereedschapskist' met een overzicht van de doelstellingen, indicatoren, uitkomstmaten, best practices en meet-instrumenten. Bovendien adviseren de deskundigen de ontwikkeling van een digitale tool om de ontwikkelde producten op aan te kunnen bieden. Het gesuggereerde 'plannings instrument' is doorontwikkeld tot het JOGG Evaluatie Handboek waarin de 'toolbox' in werd opgenomen.

Er zijn twee studies uitgevoerd om inzicht te verkrijgen in de belemmerende en bevorderende factoren van de evaluatie van ICIA-en. In Hoofdstuk 6 wordt een kwalitatief onderzoek met twee sub-studies beschreven. De doelgroep van de eerste sub-studie zijn programma-managers en epidemiologen betrokken bij de JOGG-aanpak. In de tweede sub-studie wordt het gebruik en de bruikbaarheid van de eerder verspreide evaluatie-instrumenten bestudeerd. Deze studie wordt uitgevoerd onder JOGG-programma managers, betrokken epidemiologen en deskundigen in implementatie en evaluatie van gezondheidsbevorderende programma's. Uit de bevindingen bleek dat de evaluatie wordt belemmerd door onvoldoende tijd, budget en ervaring met ICIA-en, gebrek aan leiderschap in de evaluatie planning en uitvoering en beperkte belangenbehartiging voor evaluatie. Managers gaven geen prioriteit aan procesevaluatie noch aan het betrekken van belanghebbenden hierin danwel in het investeren in de opbouw van evaluatie capaciteit. De verstrekte evaluatie-instrumenten

(incluis het Evaluatie Handboek) zijn nodig, maar worden te uitgebreid bevonden gezien de beperkte beschikbare middelen voor de JOGG-aanpak.

In **Hoofdstuk 7** worden de bevindingen van een case study in twee JOGG-gemeenten gepresenteerd. In dit kwalitatieve onderzoek werd door middel van triangulatie data verzameld via interviews, observaties en documenten. Beperkte tijd en het beperkte financiële budget werden opnieuw genoemd als belemmerende factoren voor de evaluatie van ICIA-en. Echter deze beperkingen van tijd en budget werd voorafgegaan door een gebrek aan evaluatie kennis, een negatieve houding ten opzichte van evaluatie en een beperkte communicatie met de belangrijkste belanghebbenden. Bevorderende factoren van een ICIA evaluatie waren de communicatie over de evaluatie tussen de betrokken professionals en de steun van alle belanghebbenden (op zowel strategisch als op tactisch niveau) om het programma te evalueren. Ter verbetering van de evaluatie capaciteit is het op maat opleiden van programma managers en epidemiologen op zijn plaats in combinatie met het aanbieden van instrumenten die de competentie verbeteren. Meer communicatie over de evaluatie op strategisch niveau kan de uitvoering van evaluatie te stimuleren.

Algemene conclusie

Tot slot geeft **Hoofdstuk 8** een overzicht van de belangrijkste bevindingen en reflecteert op de drie belangrijkste thema's van dit proefschrift, te weten: het gebruik en de relevantie van een logisch model, de verwachtingen en het gebruik van evaluatie-instrumenten, en belemmerende en bevorderende factoren van ICIA evaluatie. Vervolgens worden de sterke en zwakke punten van het proefschrift besproken en aanbevelingen gepresenteerd voor praktijk, beleid, onderwijs en toekomstig onderzoek. Om overgewicht en obesitas bij kinderen te voorkomen is een integrale community-brede interventie aanpak (ICIA) nodig. Om deze aanpak te optimaliseren is programma-evaluatie nodig. Deze programma evaluatie begint bij de ontwikkelingsfase van het ICIA en heeft stakeholders nodig om de aanpak te verbeteren. Echter, er zijn meerdere barrières die programma evaluatie belemmeren. Deze bevinden zich op het niveau van het individu (bijv. een negatieve houding ten opzichte van de evaluatie, evaluatie kennis en evaluatie vaardigheden), de aanpak zelf (bijv. evaluatie is niet ingebed in de programma planning, er is beperkt gebruik van de evaluatie resultaten, betrokkenheid van stakeholders) en op organisatorisch niveau (bijv. een beperkte vraag naar evaluatie van de

aanpak, geen toewijzing van middelen voor de evaluatie, evaluatieve denken niet ingebed in de gehele organisatie). Stimulerend voor opzet en uitvoer van evaluatie zijn communicatie over de evaluatie tussen de betrokken professionals en actieve ondersteuning van alle belanghebbenden op strategisch en tactisch niveau om het programma te evalueren. Een op maat gemaakte training is nodig om lokaal de capaciteit voor de evaluatie te vergroten. Dit zou dan gecombineerd kunnen worden met het verbeteren van competenties, het verbeteren van instrumenten en een toename van communicatie over de evaluatie op strategisch niveau. Wij adviseren lokale overheden, financiers en publieke organisaties om prioriteiten te stellen en te investeren in de evaluatie van het programma, in het opbouwen van capaciteit voor evaluatie en in toekomstig onderzoek naar duurzame systemen.

Dankwoord

Nu het einde van mijn promotietraject is aangebroken ruim ik thuis mijn studeerkamer op en vind in mijn bureaulade een tekening. In de zomer van 2002 was ik (net dertig) zeer rusteloos in mijn toenmalige baan. Ik wilde meer, beter en anders, maar ik wist niet wat en hoe. Mijn werkgever bood aan om dat uit te gaan zoeken en in het kader van loopbaanadvies werd ik uitgebreid getest en kreeg verschillende cursussen aangeboden. Dit maakte duidelijk dat ik meer in mijn mars had dan het ondersteunende werk wat ik toen deed. Bovendien logen mijn ambities er ook niet om: ik wilde onderzoek en verdieping, ik wilde internationaal en in vrijheid kunnen werken, maar ik wilde ook schrijven, kunnen groeien, nieuwe uitdagingen aangaan en moeilijke problemen oplossen, daarnaast was een eigen inbreng in mijn functie zeer belangrijk. De tekening in mijn bureaulade was het gevolg van een opdracht tijdens een of andere vage schreeuw-op-de-hei-cursus. De opdracht was: 'teken jezelf over tien jaar'. En daar sta ik … achter een houten katheder met microfoon, een PowerPoint presentatie achter mij, mensen toesprekend op enigszins verbleekte rood fluwelen stoelen...

Verbazingwekkend hè? Ik was het eigenlijk vergeten, die tekening, en vraag mij af: was het al die tijd een soort van onbewust doel om hier te komen? Hoe kan het dan dat ik het niet als zodanig heb uitgestippeld? Het is alsof de Cheshire Cat tegen mij spreek…"it doesn't matter which way you go, as long as you get somewhere".

In dit dankwoord wil ik graag stil staan bij allen die het mogelijk hebben gemaakt dat die tekening uiteindelijk realiteit is geworden.

Als eerste mijn ouders: wanneer ik iets niet zag zitten of ergens tegenop zag, dan haalde mijn vader vaak Mary Poppins aan: *'In every job that must be done, there is an element of fun. You find the fun, the job's done!'*. Oftewel, in alles wat je moet doen en waar je geen zin in hebt, of stom vindt, is altijd wel iets leuks te vinden, wanneer je dat vindt dan valt alles mee en is je klus snel geklaard. Die zin heeft mij geleerd om vol te houden en door te gaan, niet te zeuren maar oplossen en kijken waar je energie uit krijgt. Mijn vader heeft in de afgelopen jaren Alzheimer ontwikkeld en hij zal dan ook het einde van mijn proefschrift en de verdediging daarvan niet meer bewust meemaken. Maar wat was hij trots toen ik begon. Lieve Pap, dank je wel! Dank je dat je mij hebt geleerd wat doorzetten is, dat je mij hebt geleerd om te kijken naar de dingen die wel leuk zijn. En dank dat, ondanks dat je mijn beroepskeuzes wellicht niet altijd begreep, je wel altijd achter mij bent blijven staan en vertrouwde op wat ik deed. Dankzij jou ben ik doorgegaan, zocht de lol in dingen en vertrouwde op mijzelf.

Maar ook mijn **moeder**, die het nu alleen moet doen, laat mij nog altijd zien hoe belangrijk doorzettingsvermogen is en het hebben van vertrouwen in jezelf en uitzien naar de dingen die leuk zijn en energie geven. Lieve lieve mam, ik ben zo trots op jou! En zo dankbaar voor jou als mijn moeder. Je was en bent nog steeds mijn grootste katalysator, mijn luisterend oor, mijn reddende oppas, mijn nuchtere kijk en gelukkig ben je er altijd voor een lach of traan.

Het doen van promotieonderzoeken is een individueel aangelegenheid. Je moet de literatuur zelf lezen, de 'gaps' vinden, de onderzoeken zelf opzetten en uitvoeren, en het is daardoor best een eenzaam traject. Gelukkig zijn er in mijn werkende omgeving voortduren mensen geweest waardoor het te doen was (The Fun). Ronduit gezellig soms zelfs! Zoals met:

Ellis, mijn kamergenootje, de laatste twee jaar moest ik het zonder je stellen maar dank voor de lachbuien en de gezelligheid, maar ook dank voor jouw logisch denkvermogen dat mij meermalen inspireerde. Fijn dat je vele van mijn hersenspinsels hebt gelezen en verbeteringen suggereerde. Daarnaast was je altijd beschikbaar als dagelijkse klaagmuur en hield mij met jouw optimistische kijk op het promotietraject vaak een spiegel voor. En nu beiden een eigen bedrijf!

Jutka, dank voor jouw pragmatische adviezen en nuchtere kijk op ons hectische leven. Ondanks al die externe (heel belangrijke) factoren die de levens van jonge moeders soms ietwat verstoren is het ons beiden toch gelukt.

De **JOOBP-ers**, dank voor de uitermate zinnige discussies over ons vakgebied en jullie interesse in mijn onderzoeken en mijn wandelingen over deze aardkloot. We kregen zowaar een teamgevoel. En een beetje speciale dank daarbinnen voor **Coosje** … wat ben jij een prettig mens! Gaan we nog eens een keer echt iets samen doen? Op de snijpunten van rood en groen, van actieonderzoek en burgerparticpatie, van individu en omgeving, van evaluatie en implementatie? In plaats van alleen maar onderzoeksvoorstellen schrijven….

Lieve vrolijke dames van de **T6-gang**, dank voor de lach, de lunches, de 'cola light break' en de koffie-met-klets-en-roddels op de gang, jullie hebben mij door de jaren heen jong gehouden.

Dank fijne AiO-collega's van CIAO: **Vivian, Emilie, Rianne en Anna-Marie**. Wauw, wat hebben we gezwoegd de afgelopen jaren. Soms leken we wel een lotgenoten contact groep maar wat hebben we veel geleerd, van elkaar en met elkaar, in Nederland en daarbuiten. En ik hoop dat we elkaar met het vervolgtraject nog vaak en veel mogen zien en van elkaar leren.

Linda, jij bij OPOZ in Zwolle en ik in Amsterdam op de VU, en dan af en toe afspreken in Amersfoort om onze onderzoeken door te spreken en af te stemmen. Bijna hetzelfde promotieteam en bijna hetzelfde promotieonderwerp 'evaluatie van de integrale aanpak van overgewicht'. Wat is het een ingewikkeld onderwerp en wat was het fijn om daar met elkaar over te kunnen praten en toch nog een *samen* gevoel te hebben en die eenzame gevoelens weg te drukken, dank daarvoor. En nu nog *samen* dat ene artikel afmaken!

Maar Fun blijft toch wel een beetje bijzaak, de onderzoeken, de inzichten en de artikelen waren de hoofdzaak. En daarbij hebben de volgende mensen een grote rol gespeeld:
Mijn promotieteam, het zal vast niet altijd makkelijk zijn geweest zo'n eigenwijze tante als promovendus, die het vaak beter dacht te weten. Maar we hebben het gehaald. Ik zeg bewust *we,* want tjonge, wat heb ik jullie nodig gehad.
Jaap, dank voor jouw geloof in mij dat dit ging lukken, zonder dat vertrouwen was ik er nooit aan begonnen. Dank voor je wijselijke vergelijkingen en de nuchtere kijk op veel dingen (dank voor de glazen pot met golfballen, knikkers, zand en water; dank voor de olifant en al die blinde wijze mannen er om heen). Jouw vragen en kritische blik op de onderzoeken, jouw kennis van en kijk op de obesogene wereld, het heeft mij keer op keer laten inzien waarom mijn onderzoek belangrijk was. En die bevestiging had ik soms ook echt nodig, zo zagen Carry en Jantine ook.
Jantine dank voor je kritische vragen, je adviezen om mijn studies te optimaliseren, je theoretische inzichten en kennis van de praktijk van gezondheidsbevordering maar ook van beleid op lokaal en nationaal niveau en bovenal je geduld, je betrokkenheid en natuurlijk je vrolijkheid – je kwam altijd binnen met een lach en dat is heerlijk samenwerken. Ik weet niet hoe, wanneer of waar maar ik wens dat we nog veel dingen samen gaan doen.
Carry, met veel geduld en precisie heb je al mijn stukken gelezen, zelfs de breedsprakerige. Je was kritisch en soms streng maar altijd enthousiast. Je liet vaak zien dat je bewondering voor mij had vanwege mijn pragmatische en praktische aanpak, dat heeft mij meer en meer doen groeien in mijn rol als onderzoeker, of ben ik nou toch meer een evaluator?
Anna-Marie, ik kan toch wel zeggen dat ik van jou echt heb geleerd om wetenschappelijk te schrijven (al die cursussen ten spijt). Hele grote dank voor al die wijsheid, jouw inspiratie en hulp bij die laatste zware loodjes die uiteindelijk toch ook heel licht werden.

Alle professionals werkzaam binnen de JOGG-aanpak op het hoofdkantoor en in de **JOGG-gemeenten**, het was inspirerend en uitdagend om met jullie te werken, dank voor de samenwerking, de vele interview uren, jullie inbreng in de evaluatie trainingen en focusgroepen. Dank voor het delen van jullie 'on-the-ground' kennis en ervaringen van evaluatie in de praktijk.

Cecile, we met so many years ago on an EPODE conference, and I still feel lucky we did. Your trust in my work energized and inspired me to continue my scientific studies and finalize this thesis. You have showed me the importance of fighting malnutrition in non-developed and developing countries and the importance of our work there and you have shown me how energizing it is to work with private partners. I hope we will continue our important work together in fighting malnutrition worldwide.

Dear **Christophe**, you were there in 2009 in Paris when I started, and now you see me finish my work. Thank you, for your enthusiasm and your energy, and for sharing your knowledge of the integrated approaches of overweight and obesity and its evaluation with me. You kept reminding me of the importance of my work done and I'm grateful for that. Working with you is a true pleasure and I hope you will pursue to increase our knowledge with me on the evaluation and implementation of divers public health programmes worldwide.

En speciale dank voor **Lenneke Vaandrager, Stef Kremers** voor het lezen en accorderen van mijn proefschrift, heel erg spijtig dat jullie niet de mogelijkheid hadden om te opponeren, dat was om verschillende redenen een hele mooie afsluiting geweest. Dank vanzelfsprekend voor **Karien Stronks, Arnoud Verhoeff, Hans van Oers, Ingrid Steenhuis** en **Joop ten Dam** voor het lezen, accorderen van mijn proefschrift voor mijn openbare verdediging en het opponeren.

En dan is er nog die oh, zo belangrijk sociale cirkel, die de ruimte moet bieden om te werken en te leren, die rust en afleiding geeft en die de grijze massa af en toe eens even flink schoon blaast. Al die lieve vrienden en vriendinnen, goeie buren, familie en schoonfamilie, te veel om iedereen bij naam te noemen maar super bedankt voor jullie interesse, jullie steun voor mij en mijn gezin in moeilijke of drukke tijden, en op het laatst voor jullie geduld en begrip in het moeten wachten op dit feestje...

Alijne, Jojanneke, Marjanne: nooit verwacht, toch gebeurt. Wat fijn dat jullie er al die jaren waren! Het reflecteren op de vele facetten van ons vakgebied en van onze parallelle levens zorgde ervoor dat ik de context bleef zien waarin ik werkte en leefde. Gezellig en soms ook

uitermate nuttig waren al die etentjes de afgelopen jaren, laten we daar vooral mee doorgaan! En nu ook twee van jullie mijn paranimfen, hoe bijzonder is dat!

Niels, mijn man en mijn allerbeste maatje om ups en downs mee te delen. Dank voor je logica, je rust, je luisterend oor, je eeuwige vertrouwen in mij dat het ging lukken en natuurlijk je liefde! Dank voor de ruimte die jij mij gaf naast ons gezin om dit voor elkaar te krijgen.

Mijn meiden: **Anneroos, Elsemiek en Florine**, jullie brachten naast onrust ook vaak weer de balans in drukke tijden door jullie vraag naar rust, reinheid en regelmaat. Ik hoop dat mijn doorzettingsvermogen voor jullie een voorbeeld mag zijn. Niet vergeten: 'waar een wil is, is een weg'.

About the author

Marije was born at 23rd of June 1972 in Oss, the Netherlands, as youngest daughter of Dirk-Jan van Koperen and Margriet Afman. After finishing high school she moved to Groningen where she completed her Bachelor in Nursing (Hanze University of Applied Sciences). In 1997 in Amsterdam she commenced to work as an employment consultant and higher management assistant in large private commercial organizations.

In 2003 Marije van Koperen started working at the National Institute of Health Promotion and Disease Prevention (NIGZ) for the National Campaign of Organ and Tissue Donation. In this year she also began her education at the Maastricht University. She graduated from the Faculty of Health Sciences with a major in Health Education and Health Promotion in July 2007. From 2007 to 2008 Marije worked at the NIGZ on multiple projects oriented at health promotion, mostly as a consultant for municipalities and Regional Public Health Services (GGD). Her focus was on setting up local intersectoral public health policy, the implementation of community based physical exercise programs (Lokaal Actief) and programmes which combined the green physical environment and the built environment. During this time she was also a member of the Board of the Dutch Society for Prevention and Health Promotion (NVPG).

In 2008 the department of Health Sciences of the VU University obtained a grant from the EU to study the evaluation of the EPODE approach for which Marije van Koperen was appointed researcher. During this EU study Marije was involved in multiple think-tanks and advisory committees to establish an EPODE-like programme in the Netherlands and provide insight in the EPODE methodology.

In 2011 she obtained a grant with the Consortium Integrated Approach on Overweight (CIAO) to continue her research on the evaluation strategies of the integrated community-wide intervention approaches of overweight and obesity in children. During the CIAO studies she joined the JOGG-approach to provide evaluation training to programme managers and epidemiologists and advise the JOGG-office on evaluation issues.

In finalizing her PhD she started her own company, Cuprifère Consult, and now advises municipalities, RPHSs, intermediary organisations and an international private organization in the evaluation of comprehensive approaches to prevent malnutrition in children. Looking forward in her future career, Marije hopes to continue her work on evaluation methodology

of the integrated community-wide approaches in the Netherlands and abroad, to share her knowledge and skills with practitioners and management, to inspire future Public Health Professionals to understand and use evaluation to improve their work and to continue to go where ever she goes, where ever she wants.

Publications

PUBLICATIONS PRESENTED IN THIS THESIS

Published

Van Koperen T.M., Jebb S.A., Summerbell C.D., Visscher T.L. , Romon M., Borys J.M. and Seidell J.C. **Characterizing the EPODE logic model: unravelling the past and informing the future.** Obesity reviews, 2013; 14 (2). pp. 162-170.

Van Koperen T.M., Van der Kleij M.J., Renders C.M., Crone M.R., Hendriks A-M, Jansen M., Van de Gaar V.M., Raat H., Ruiter E.L.M., Molleman G.R.M., Schuit A.J. and Seidell J.C. **Design of CIAO, a research program to support the development of an integrated approach to prevent overweight and obesity in the Netherlands**. BMC Obesity 2014 1:5

Van Koperen, T.M. , C.M. Renders, E.L. Vyth, J.C. Seidell, A.J. Schuit. **Het Evaluatie Raamwerk voor de Integrale Aanpak van Overgewicht, verslag van een expertconsultatie**. Tijdschrift voor Gezondheidswetenschappen (TSG) 2-2014

Van Koperen T.M., De Kruif A., Van Antwerpen L., Hendriks A-M, Seidell J.C., Schuit A.J. and Renders, C.M. **Barriers to and Facilitators of the Evaluation of Integrated Community-Wide Overweight Intervention Approaches: A Qualitative Case Study in Two Dutch Municipalities**. Int. J. Environ. Res. Public Health 2016, 13(4), 390; doi:10.3390/ijerph13040390

Van Koperen T.M., Renders C.M., Spierings E., Hendriks A-M., Westerman M., Seidell J.C. and Schuit A.J. **Recommendations and Improvements for the Evaluation of Integrated Community-wide Interventions Approaches**. Accepted for publication in Journal of Obesity.

Submitted

Van Koperen, T.M., Renders C.M., Schuit A.J., Seidell J.C. **Finding a suitable evaluation framework for Integrated Community-wide Intervention Approaches: easier said than done**

OTHER PUBLICATIONS

Borys J.M., Le Bodo Y., Jebb S.A., Seidell J.C., Summerbell C., Richard D., De Henauw S., Moreno L.A., Romon M., Visscher T.L.S., Raffin S., Swinburn B. and the EEN Study Group (2012) **EPODE approach for childhood obesity prevention: methods, progress and international development**. Obesity Reviews, 2012; 13 (4). pp. 299–315

Van Koperen, T.M., Seidell, J.C. (2010) **Overgewichtpreventie, een lokale aanpak naar Frans voorbeeld.** Praktische Pediatrie, Issue 2, pages 10-14

Storm I., Van Koperen T.M., Van der Lucht F.,Van Oers H., Schuit A.J. **Monitoren en evalueren van integraal gezondheidsbeleid.** Beleidsonderzoek Online, September 2014 (appeared in English as Chapter 7 in the PhD thesis of I. Storm 'Towards a HiAp Cycle, Health in All Policies as a practice-based improvement process' as: Storm I., Van Koperen T.M., Van der Lucht F.,Van Oers H., Schuit A.J. **Monitoring and evaluating 'Health in All Policies'** http://dare.ubvu.vu.nl/bitstream/handle/1871/54580/chapter%207.pdf?sequence=13&isAllowed=y accessed 07-10-2016).

BOOKS

Van Koperen, T. M., T. L. S. Visscher, J.C. Seidell (2011). **Scientific evaluation and dissemination. Preventing Childhood Obesity, Epode European Network Recommendations**. In: J. M. Borys, Y. Le Bodo, S. De Henauwet al. (eds) Cachan cedex, Lavoisier: 145 -179.

PRESENTATIONS

Van Koperen TM, Seidell JC, Visscher TLS and Greaux KM. **The EPODE Evaluation Framework**. 11th International Congress on Obesity Pre Congress Meeting on Sociocultural, Behavioural and Economic Factors in Obesity Prevention, 10 July 2010, Stockholm (oral)

Van Koperen TM, Seidell JC, Visscher TLS and Greaux KM. **The EPODE Evaluation Framework** 11th International Congress on Obesity, 11-15 July 2010, Stockholm, Sweden Obesity Reviews 2010:11 (Suppl 1), Abstract T5:OS2.6 (poster)

Hiemstra-Willemsen L, Van Koperen TM. **Het schaap met de vijf poten: Duurzaamheid van de integrale aanpak vergroot door theorie gestuurde evaluatie** [sustainability of the integrated approach through theory driven evaluation] workshop 16). NCVGZ 2011, Amsterdam, The Netherlands. TSG (89) 2011:3;24 (oral)

Van Koperen T.M. **Evaluation Framework for Integrated Community-wide Intervention Approaches International** Obesity Conference, june 2012, New York, US (oral)

Van Koperen T.M., Van der Kleij M.J.J., Van der Gaar V.M., Hendriks A-M., Ruiter E.L.M. **Research on the comprehensive integrated community approach to prevent overweight and obesity in children**. ECO 2012, Lyon, France (poster)

Van Koperen T.M., Jebb S.A., Summerbell C.D., Visscher T.L. , Romon M., Borys J.M. and Seidell J.C. **Characterising the EPODE Logic Model: Unravelling the past and informing the future**. European Evaluation Society Symposium 2012, Helsinki, Finland (oral)

Van Koperen T.M**. Ronde tafelgesprekken over Monitoring en Evaluatie van Wijkprogramma's, uitdagingen en voorwaarden** (round table on monitoring and evaluation of community programmes, challenges and preconditions). 'Voor de Jeugd Festival van VWS', oktober 2013 Westergasfabriek Amsterdam, The Netherlands (oral)

Van Koperen T.M., Hendriks A-M, Van der Kleij M.J.J., Van de Gaar V.M.J., Ruiter E.L.M. **Research methods in the formative evaluation of the comprehensive integrated community-wide approach to prevent overweight and obesity in children**. Transzo Holland Fuse conference, 2013, Noorwijkerhout, The Netherlands (oral)

Van Koperen, T.M., **Lessons from research on an integrated approach to urban health.** 3rd City Health International Conference, 3-4 Nov 2014, Amsterdam, The Netherlands (oral)

Van Koperen, T.M., Renders C.M., Schuit A.J., Seidell J.C. **An Evaluation Framework to deal with constraints in the evaluation of integrated community-wide intervention approaches of overweight prevention in the Netherlands** ICO 2014, Kuala Lumpur, Malaysia (poster)

Van Koperen T.M., Van der Kleij M.J., Renders C.M., Crone M.R., Hendriks A-M, Jansen M., Van de Gaar V.M., Raat H., Ruiter E.L.M., Molleman G.R.M., Schuit A.J. and Seidell J.C. **Design of CIAO, A comprehensive Research**

Program to Support the development of an Integrated Approach to Prevent Overweight in Children in The Netherlands. ICO 2014, Kuala Lumpur, Malaysia (poster)

Van Koperen T.M., De Kruif A., Van Antwerpen L., Hendriks A-M, Seidell J.C., Schuit A.J. and Renders, C.M. **Belemmerende en bevorderende factoren voor de evaluatie van de integrale wijkgerichte aanpak: een kwalitatief onderzoek** (Barriers to and Facilitators of the Evaluation of Integrated Community-Wide Overweight Intervention Approaches: A Qualitative Case Study in Two Dutch Municipalities). NCVGZ 2016, Rotterdam, Nederland (poster)

Van Koperen T.M., De Kruif A., Van Antwerpen L., Hendriks A-M, Seidell J.C., Schuit A.J. and Renders, C.M. **Barriers to and Facilitators of the Evaluation of Integrated Community-Wide Overweight Intervention Approaches: A Qualitative Case Study in Two Dutch Municipalities**. European Evaluation Society Bi-annual conference 2016, Maastricht, Nederland (oral)

OTHER

EUFIC Podcast, Evaluation of Community Based Interventions
http://www.eufic.org/page/en/page/MEDIACENTRE/podid/news-obesity-research-highlights-international-congress-obesity-2010/

NSPOH/RIVM, Netwerkbijeenkomst: Evalueren van programma's gezondheidsbevordering in wijk en gemeente (Networking: Evaluating health programmes in communities and municipalities). Utrecht, 27 november 2012

Interview in ZonMW Magazine 'Onderzoek biedt houvast aan lokaal gezondheidsbeleid' (Research provides guidance to local health) via: www.zonmw.nl/igbmagazine

Webpage: onderzoek VUMC http://www.vumc.nl/onderzoek/nieuws/6093244/